FEBRUARY 21, 1955 Are Trainload Rates the Answer? . . . p. 47

RAILWAY AGE

One of Five Simmons-Boardman Railway Publications

RAILROADS are switching to roller bearings to: 1) end the hot box problem, 2) cut operating and maintenance costs to a minimum; other advantages are secondary. And the Timken® tapered roller bearing is the *one* bearing you can count on to do this. It's the taper! Here's why:

1) *No lateral movement within the bearing.* In straight roller designs, incessant lateral movement scuffs rollers and races, shortening bearing life. Lubricant is pumped through the seal and out of the journal box, dirt and water are drawn in. The auxiliary devices in some designs, needed to take thrust loads, are hard to lubricate with grease and need more maintenance.

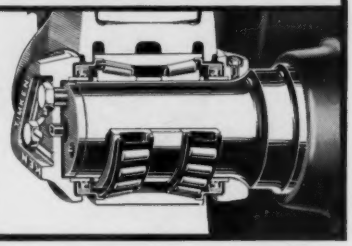
The taper in Timken bearings prevents lateral movement, takes thrust loads. Because Timken bearings always roll, there's no scoring, scuffing or pumping. Result: the hot box problem is eliminated. Less maintenance and lubricant are needed. Bearing life is increased.

2) *Positive roller alignment.* The taper holds roller ends snug against the rib, where wide area contact keeps rollers aligned. There's no skewing of rollers to upset full line contact, shorten bearing life.

Get what you pay for when you switch to roller bearings to end the hot box problem and cut operating and maintenance costs to a minimum. Get Timken tapered roller bearings. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable: "TIMROSCO".

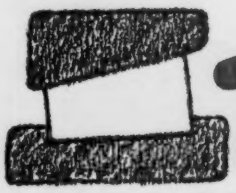
NOT JUST A BALL ○ NOT JUST A ROLLER ⊂⊃ THE TIMKEN TAPERED ROLLER ⊂⊃
BEARING TAKES RADIAL ⊕ AND THRUST ←⊕→ LOADS OR ANY COMBINATION ⊕

THE TAPER MAKES
TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
THE BEARING YOU TRUST

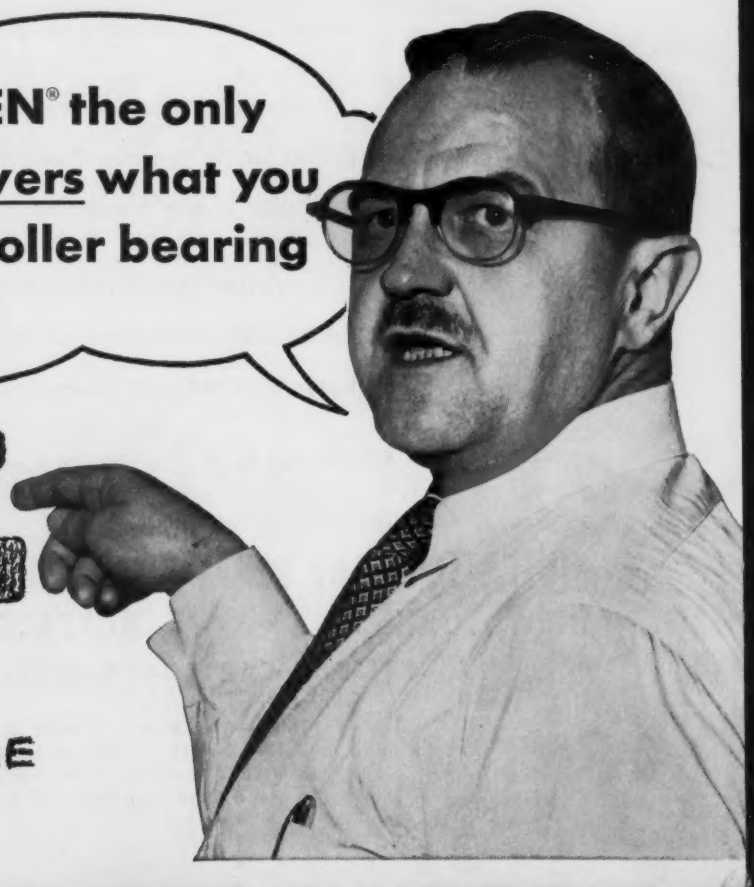


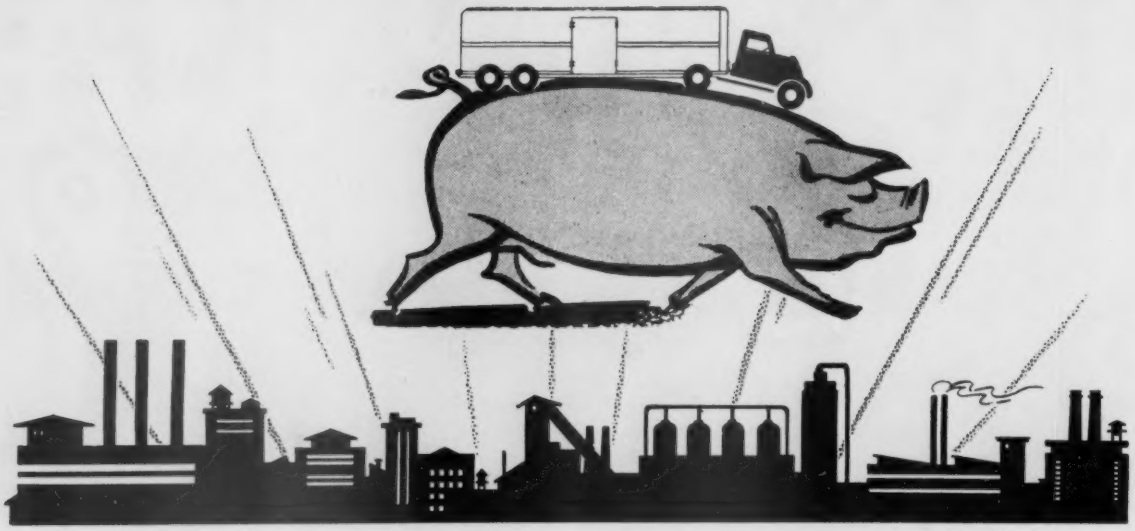
This month Dr. Oscar Horger demonstrates advantage of no lateral movement

The taper makes TIMKEN® the only journal bearing that delivers what you expect when you buy a roller bearing



NO LATERAL
SLIDING TO SCORE
OR SCUFF





PIGGYBACK...

and national defense

Conservation of the nation's transportation system is vital to our national defense.

We have the world's finest rail transport system, capable of carrying large masses of men and heavy equipment wherever they may be needed—and fast!

Because the railroads are not subsidized, they must depend on *your* freight dollars for maintenance of existing facilities, as well as for the development and expansion of new transportation techniques.

The newest thing in railroading is "PIGGYBACK." Where available, this fast, dependable rail-highway coordinated service assures you prompt, economical transportation today, insures top railroad performance tomorrow.

It's up to you, Mr. Traffic Manager.

BUFFALO BRAKE BEAM COMPANY • UNIT TRUCK CORPORATION

NEW YORK • BUFFALO • HAMILTON, ONT.

FREIGHT CAR BRAKE RIGGING FOR HALF A CENTURY

This — the latest in a series of magazine advertisements to traffic men sponsored by BUFFALO-UNIT in behalf of the railroads — has significant topical interest in the face of today's headlines. More than a quarter million reprints of this, and other similar messages, have been distributed by the railroads to traffic personnel and shippers.

Here's a Sure Cure for the Shakes

Consider the number of heavy trains that rumble over some of your right-of-way bridges in 24 hours. It's enough to give any bridge the shakes. But with Bethlehem High-Strength Bolts on the job, there's no costly maintenance problem involved, for connections stay tight indefinitely, despite the effects of continued vibration.

Bethlehem High-Strength Bolts not only hold better, minimizing the effects of vibration—they also save time on new construction, because they can be installed easily.

The bolts are used with two hardened washers. One washer is placed under the hexagonal head. The other washer is placed under the hexagonal nut. While one man grasps the bolt head with a holding wrench, his partner tightens the nut to predetermined torque with a pneumatic impact wrench. That's all there is to it.

Bethlehem High-Strength Bolts are heat-treated by quenching and tempering, and fully meet the requirements of ASTM Specification A-325. We carry them in stock in a complete range of sizes.

If you would like to learn more about high-strength bolts, ask the nearest Bethlehem office for a copy of our booklet, "High-Strength Bolting for Structural Joints."

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation

Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM HIGH-STRENGTH BOLTS

BETHLEHEM STEEL

FOR LONG LIFE AND MAXIMUM SAFETY

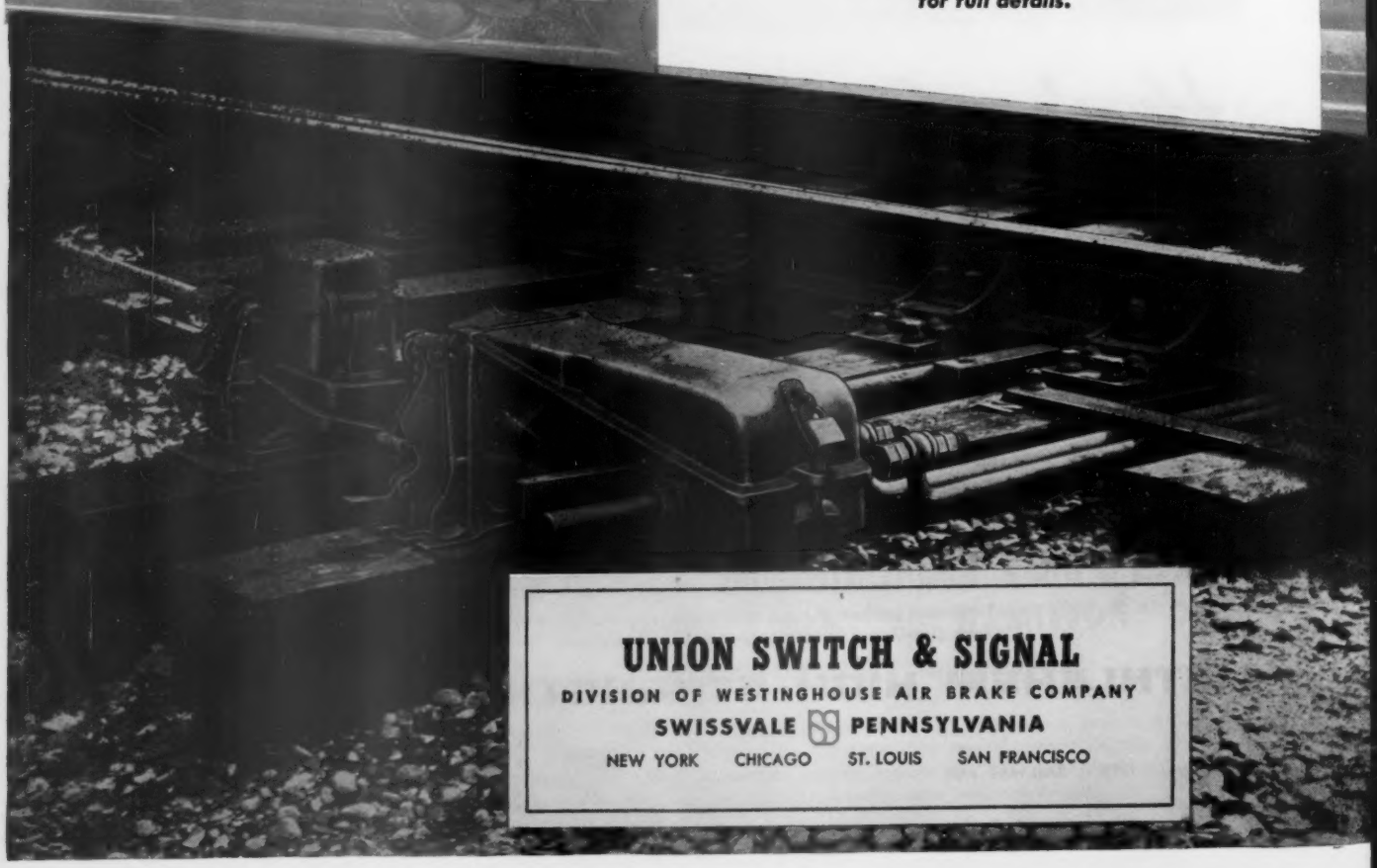
you can depend on

"UNION" SWITCH STANDS

Here's what "UNION" Switch Stands provide:

1. Safety
2. Ease of throwing
3. Genuine facing point lock protection
4. Circuit controller check of lock rod position
5. Independent circuit controller check of switch point position
6. Strength and reliability
7. Ease of maintenance
8. Universal application
9. Convenient application of electric switch locks
10. Long life

Ask our nearest district office for full details.



UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

RAILWAY AGE

EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y., AND 79 WEST MONROE STREET, CHICAGO 3, ILL.

EDITOR ..... James G. Lyne
EDITORIAL CONSULTANT ..... Samuel O. Dunn
EXECUTIVE EDITOR ..... William H. Schmidt, Jr.
MANAGING EDITOR ..... C. B. Tavenner
CONSULTING EDITOR ..... C. B. Peck
NEWS & FINANCIAL ..... Gardner C. Hudson
WASHINGTON OFFICE
Walter J. Taft Robert B. Keane
WESTERN EDITOR ..... M. H. Dick
TRAFFIC & TRANSPORTATION
John W. Milliken Joe W. Kizzia
MECHANICAL ..... H. C. Wilcox
E. L. Woodward, G. J. Weihofen, C. L. Combes
ELECTRICAL ..... Alfred G. Oehler
ENGINEERING ..... M. H. Dick
R. E. Dove H. H. Hall R. F. Lindsay
PURCHASES & EQUIPMENT ..... Fred C. Miles
SIGNALING & COMMUNICATIONS
John H. Dunn Robert W. McKnight
WESTERN NEWS ..... A. M. Cox, Jr.
PRESENTATION ..... Ralph M. Schmidl
ASSOCIATE EDITOR ..... Charles Layng
LIBRARIAN ..... Edith C. Stone
EDITORIAL ASSISTANTS ..... Ann Ortlinghaus
June Meyer Wanda Brown

BRANCH OFFICES
WASHINGTON 4, D. C., 1081 National Press Building
CLEVELAND 13, OHIO, Terminal Tower
PORTLAND 5, ORE., Terminal Sales Bldg.
LOS ANGELES 17, CAL., 1127 Wilshire Blvd.
SAN FRANCISCO 4, CAL., 244 California St.
DALLAS 19, TEX., 3908 Lemmon Avenue
CORAL GABLES, FLA., 1810 Ponce de Leon Blvd.

FOREIGN REPRESENTATIVES
LONDON E.C. 2, England—Sibley-Field Publishing Company, Ltd., 48 London Wall
FRANKFURT AM MAIN (16), West Germany—Linder Presse Union GMBH, International Advertising Agency, Wittelsbacher Allee 60

DIRECTOR ADVERTISING SALES
J. S. Crane, *New York*
SALES MANAGER
J. R. Thompson, *Chicago*
DISTRICT SALES MANAGERS
H. H. Melville, *Cleveland*
C. W. Merriken, *New York*
DIRECTOR OF PRODUCTION
M. J. Figa, Jr., *New York*

Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn., under the Act of March 3, 1879. James G. Lyne, president. Arthur J. McGinnis, executive vice-president and treasurer. Samuel O. Dunn, chairman emeritus. J. S. Crane, vice-president and secretary.

SUBSCRIPTION TO RAILROAD EMPLOYEES ONLY IN U. S., U. S. POSSESSIONS, CANADA AND MEXICO, $4 ONE YEAR, $6 TWO YEARS, PAYABLE IN ADVANCE AND POSTAGE FREE. TO RAILROAD EMPLOYEES ELSEWHERE IN THE WESTERN HEMISPHERE, $10 A YEAR; IN OTHER COUNTRIES, $15 A YEAR—TWO-YEAR SUBSCRIPTIONS DOUBLE ONE-YEAR RATE, SINGLE COPIES 50c, EXCEPT SPECIAL ISSUES $1. CONCERNING SUBSCRIPTIONS ADDRESS ROBERT G. LEWIS, VICE-PRESIDENT, 30 CHURCH ST., NEW YORK 7.

February 21, 1955 **Vol. 138, No. 8**

Week at a Glance

Lightweight passenger trains, of several new and startingly different designs, and on several different railroads, now look like a near-future certainty. 8

Research on rates, under AAR auspices, to develop both "responsibilities" and "opportunities," has been suggested by DL&W President Shoemaker. 9

Final 1954 financial returns for all Class I railroads are included in *Railway Age's* regular Revenue and Expense tables. 35, 36, 38, 42

FORUM: Trainload rates — Are they an answer or a mirage? 47

Automation for short-line track maintenance might be achieved by any of three plans suggested by Royce Kershaw. 48

24-Hour a day TV is being tested by the SP in Los Angeles' Taylor yard. 50

Training for the AAR's car service staff is being carried out on a regular basis in a carefully planned transportation seminar. 51

A "piggyback" cost cutter is how the Clark Equipment Company describes its "Mobilvan" system. 53

Iron ore moves faster down to Lake Superior, because of an overall improvement program undertaken by the Canadian National. 54

BRIEFS

Reverse signaling of the entire New Haven, and purchase of 150 more commuter cars, are goals of the railroad's president, Patrick B. McGinnis. Speaking at a New York press conference last week, Mr. McGinnis

8 REASONS WHY

Heat inner race, shrink onto journal. No spacers or mounting fixtures are required.

Simply remove shipping cover and slip box onto inner race. No adjustments whatever!

Bolt locking cup to end of axle, replace front cover, apply grease gun; *that's all!*

HYATT BOXES BELONG ON YOUR FREIGHT CAR JOURNALS:

1. **Easiest to Install**—Just as received from factory—sequence photos at left show how simple it is.
2. **Easiest to Inspect**—Hyatt's amazingly easy assembly and disassembly saves dollars every inspection.
3. **Easiest to Maintain**—Simple, trouble-free construction assures less maintenance over the years.
4. **Free Lateral**—This great advantage insures less lading damage, less wear on trucks and flanges.
5. **One-piece Inner Race**—Simplifies installation and maintenance—becomes a permanent part of journal.
6. **No Pre-assembly Adjustments**—Hyatts require no adjustments—save costly time on every application.
7. **Press Fits Not Disturbed**—When removing a box or a wheel, this advantage saves added costly hours.
8. **Smaller Parts Inventory**—Spare axles and wheels need be fitted with inner races, nothing else.

Don't compare *purchase cost alone* when you're considering roller bearing journal boxes for your freight cars. Compare *installation cost—maintenance cost—inspection cost*, too! Hyatts, *and only Hyatts*, are designed to give you these *long-haul* economies—plus the added savings in wear and lading damage which are made possible by Hyatt's "*free lateral*" feature! When you compare *all* these factors carefully, there's only one logical choice and more and more railroads are making it: *HYATTS!* Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT

RUNNING MATE OF FASTER FREIGHT

ROLLER BEARING JOURNAL BOXES

Current Statistics

Operating revenues, twelve months	
1954	$9,370,905,784
1953	10,664,264,383
Operating expenses, twelve months	
1954	$7,384,226,784
1953	8,135,346,686
Taxes, twelve months	
1954	$ 861,147,306
1953	1,185,017,865
Net railway operating income, twelve months	
1954	$ 874,505,486
1953	1,109,350,754
Net income, estimated, twelve months	
1954	$ 666,000,000
1953	868,000,000
Average price railroad stocks	
February 15, 1955	88.98
February 16, 1954	62.13
Carloadings, revenue freight	
Five weeks, 1955	3,165,510
Five weeks, 1954	3,113,891
Average daily freight car surplus	
Wk. ended February 12, 1955	47,998
Wk. ended February 13, 1954	108,660
Average daily freight car shortage	
Wk. ended February 12, 1955	672
Wk. ended February 13, 1954	522
Freight cars on order	
February 1, 1955	18,395
February 1, 1954	27,959
Freight cars delivered	
One month, 1955	2,008
One month, 1954	4,944

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATIONS (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE, ESTABLISHED IN 1856, INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE. NAME REGISTERD IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA.

Departments

Benchmarks & Yardsticks	52
Competitive Transport	13
Education	10
Equipment & Supplies	8
Figures of the Week	16
Financial	16
Forum	47
Freight Operating Statistics	66, 67
In Congress	13
Law & Regulation	10
People in the News	14
Railway Officers	60
Rates & Fares	9
Revenues & Expenses	35, 36, 38, 42
Securities	16
Supply Trade	56
Traffic	11
What's New in Products	45

Week at a Glance CONTINUED

said he could not yet estimate the cost of such a signaling project, nor guess when it would begin, but he thought that, once it began, work could be completed in a year.

A 22½% "skill differential" wage increase, applicable to all wages, guarantees, arbitraries and allowances on all major railroads, is the latest objective of the Brotherhood of Locomotive Engineers.

A new under secretary of commerce for transportation has been appointed by President Eisenhower. He is Louis S. Rothschild, who has been administrator of the Maritime Administration and chairman of the Federal Maritime Board. When confirmed by the Senate, he will become the successor to Robert B. Murray, Jr., who resigned last month.

Pick-up and delivery charges were dropped by eastern railroads generally on February 16. Effective on that day was an agency tariff which cancelled formerly-effective plus charges of 10 cents per 100 lb for pick-up or delivery on shipments of less than 5,000 lb. Larger shipments were already accorded p&d service without charge in addition to line-haul rates.

Three-cent mail carried by air during 1954's third quarter accounted for 11.88% of the total ton-miles performed by the air lines in carrying all their letter-mail business. This was shown in a compilation made by the ICC's Bureau of Transport Economics and Statistics. The growth was pointed up by the comparable figure of 3.58% for the fourth quarter of 1953, when the "experiment" was inaugurated.

Piggyback surprise! — Several midwestern roads have experienced a much greater demand for open-top trailer equipment than they had counted on when they acquired their highway equipment.

A self-supporting monorail system for the Los Angeles metropolitan area was envisioned by George W. Burpee,

How to put highway miles on tracks!

The U. S. highway is a mighty busy place these days. In fact, the I. C. C. estimates that in 1953, motorists traveled about 500 billion miles on it to get from one city to another.

Obviously, many motorists drove these hazardous, tiring miles only because they needed a car at their destination. But you can put many of these highway miles on your tracks . . . and increase your passenger revenue with the Hertz Rail-Auto Travel Plan. This increasingly popular mode of travel offers Americans the speed and luxury of modern trains . . . plus the convenience of a clean, new Hertz car at their destination.

Last year alone, people who rented Hertz cars at their destination actually traveled more than 136 million miles on the railroads first. Now, you, as railroad management, can put even more highway miles on tracks by telling more people about the plan. Here are some simple ways you can help:

1 TRY the Hertz Rail-Auto Travel Plan yourself. See how courteous, convenient and economical Hertz service really is.

2 URGE your ticket agents to ask passengers this simple question: *"May I reserve a Hertz car for you at your destination?"* The agent who makes the reservation gets 10% commission on the total rental charge.

3 DISPLAY specially designed and attractively printed Hertz signs on the grill of your ticket agents' windows. The signs read, *"Reserve your Hertz car from your ticket agent,"* and are available, along with passenger Rail-Auto folders, at no charge to you.

4 MENTION the plan in your own advertising as an added inducement for persons to travel by rail. Use displays in your ticket offices. Advertise the plan in your timetable . . . on your billboards . . . on highway over-passes. This way, you will be taking advantage of the $1,000,000 Hertz spends every year in leading national magazines to advertise the Rail-Auto Travel Plan.

And remember this: Only Hertz, largest rent a car system in the world, can truly back up the Rail-Auto Travel Plan with more than 9,400 cars at nearly 800 offices in over 550 cities throughout the United States and foreign countries. And because of more than 30 years in the business, Hertz offers your passengers only the finest, most courteous service. With Hertz you're also assured of steady Rail-Auto Travel Plan business because more than 1,500,000 persons now hold Hertz Charge Cards and Courtesy Cards. Hertz also honors Rail Credit Cards. For more information about the Hertz Rail-Auto Travel Plan, and for reservation forms or other display material . . . write or phone.

HERTZ *Rent A Car* **SYSTEM**

Dept. D25, 218 South Wabash Avenue
Chicago 4, Illinois; phone: WEbster 9-5165

Week at a Glance CONTINUED

senior partner in Coverdale & Colptts, New York consulting engineers, in a paper read at the recent convention of the American Society of Civil Engineers. Estimated construction cost of the 45.7-mi system is $137,166,465.

"The Super Continental" is the name chosen by the Canadian National for its new fast transcontinental train going into Montreal-Vancouver service April 24. The run will be made in 73 hr, 20 min, cutting 14 hr, 5 min from the present schedule.

Free breakfasts are given to all sleeping car passengers on the Bangor & Aroostook. Decision to serve the free breakfast—which includes juice, eggs, bacon, muffins or toast, and coffee—stems from the success of the free morning coffee service available to bedroom and roomette passengers during the past year.

A $3-billion modernization program for British Railways has been submitted to the British Ministry of Transport. About $1 billion would be spent to replace the system's present 19,000 steam locomotives by diesel and electric motive power.

Thirty-seven loaded truck trailers moved between Chicago and the Twin Cities on the night of February 15, when the Chicago & North Western inaugurated quantity, or trailerload, rates between those points on a broad list of commodities. The new service is on a daily overnight door-to-door delivery basis at truck-competitive rates. The road began piggybacking lcl shipments between the same points at regular rail lcl rates in November 1953.

Overseas railroad men — nearly 100 of them from eight countries—will visit the U. S. during 1955 under a continuing government program of giving foreign railroaders an opportunity to study facilities and operating methods of our carriers.

The conveyor subway system to be installed between Grand Central Terminal and Times Square in New York City at a cost slightly exceeding $5,000,000 may be expanded. Extensions of the system which can be applied to transit operations of any length are under study.

24 hours have been shaved off Canadian National freight service between New York-New England points and Detroit and Milwaukee. The time saving also affects shipments to various points on the Grand Trunk Western.

Bless the ladies! The Pennsylvania, February 16, began letting the gals travel in coaches from Philadelphia and Trenton to New York, and return, for the price of the one-way fare. The bargain is available each Wednesday through April 6. On February 14, the Hudson & Manhattan inaugurated half-fare roundtrip tickets, for ladies, from Hoboken and Jersey City to 33rd street, New York. The service, available each Monday for 90 days, will be extended if public response justifies.

Railroading and railroad philately are being promoted by the Casey Jones Railroad Unit of the American Topical Association, which is currently sponsoring a showing of stamps, all with railroad motifs, in the window of the UP's downtown Los Angeles ticket office.

That more mass transportation by rail, not less, is essential to the sound economic growth and civil defense of the New York metropolitan area, is the belief of the Metropolitan Rapid Transit Commission, according to its chairman, Charles H. Tuttle. The commission, he said, will spend at least $800,000 for a study of the area's present and prospective rapid transit needs.

Four RRs to Order New Type Cars

Two additional roads will announce plans later; three distinct types of trains involved, plus modified "Talgo"

At least four railroads soon will place orders for new passenger train equipment "startlingly different" from conventional designs, according to a joint announcement by the presidents of the Baltimore & Ohio, the Chesapeake & Ohio, the New Haven, the New York Central, the Pennsylvania and Santa Fe.

After six months' study of all present and proposed designs for modern passenger equipment, during which time representatives of the railroads toured Europe and worked with the major car builders in the United States, it was decided that three distinct types of new train designs should be constructed and operated, the announcement said. These are in addition to a modified type of "Talgo" train being built by ACF Industries for the Rock Island.

The PRR has agreed upon a train of new tubular design which will be readily interchangeable with conventional equipment, yet will have depressed centers and normally would be operated in integrated trains. Purchase of such a train is expected to be made shortly after completion of specifications. The PRR will put this equipment in moderate distance service between major cities such as New York-Pittsburgh and New York-Washington.

The Santa Fe soon will decide upon a new design for equipment to be used first in its "El Capitan" between Los Angeles and Chicago.

The NYC has agreed to purchase a complete integrated train similar to the design known as "Train X." The road also is planning experimentation with moderate distance runs, such as New York-Buffalo and Chicago-Detroit, both for daylight and evening trips.

The New Haven will purchase a third type of train, being designed in cooperation with Grumman Aircraft Company engineers. The New Haven will concentrate on its main-line New York-Boston service.

The cooperating railroads will share all information regarding engineering and economic results, as well as details of passenger acceptance, and thereby pool experience to guide future development work.

In addition to these new train designs, General Motors Corporation is developing an experimental train with a special high-speed diesel locomotive, with the intention of having it available to railroads for trial use, starting in late 1955, the announcement said.

Howard E. Simpson, president of the B&O, and Walter J. Tuohy, president of the C&O, the two other cooperating railroads in the group of six, temporarily postponed announcement of their plans.

"POSITIVELY THE LAST" Santa Fe steam operation in the vicinity of Los Angeles, according to Coast Lines General Manager R. D. Shelton, was an all-day excursion to Barstow and return on February 6. The trip was sponsored by the Railway Club of Southern California, which, incidentally, bore the expense of putting long-stored 4-8-4-type steam locomotive 3759 in shape to handle the 400-passenger train. Picture above shows the train giving excursionist-photographers an "action shot."

FREIGHT CARS

2,008 New Freight Cars Delivered in January

New freight cars for domestic use delivered in January totaled 2,008, compared with 2,173 in December and 4,944 in January 1954, the American Railway Car Institute and the Association of American Railroads have announced jointly.

Orders for 5,087 new freight cars were placed in January, compared with 2,685 in December, the announcement said, and the backlog of cars on order and undelivered February 1 was 18,395, compared with 15,317 on January 1. A breakdown by types of cars ordered and delivered in January, and of cars on order February 1, appears in the following table:

	Ordered Jan. '55	Delivered Jan. '55	On Order Feb. 1, 55
Box—Plain	3,008	1,150	10,815
Box—Auto	0	63	0
Flat	427	115	882
Gondola	401	130	1,474
Hopper	397	0	1,597
Covered Hopper	600	58	884
Refrigerator	0	175	1,550
Tank	140	295	938
Caboose	14	0	71
Other	100	22	184
TOTAL	5,087	2,008	18,395
Car builders	2,749	1,599	9,515
Railroad shops	2,338	409	8,880

The **Santa Fe** has increased by 100 units a previous order for 50 mechanical refrigerator cars to be built in its own shops (*Railway Age*, January 31, page 15). The 150 50-ft cars will be insulated for transporting frozen foods at temperatures of zero or lower.

LOCOMOTIVES

The **Canadian National** has ordered 38 diesel-electric switching locomotives. General Motors Diesel, Ltd., will build 23 1,200-hp units; the Canadian Locomotive Company, 10 1,200-hp units; and the Montreal Locomotive Works, five 1,200-hp units.

SPECIAL

The **Southern** has ordered 82 pieces of railroad track maintenance equipment from the Railway Maintenance Corporation, at a cost of $2,500,000. Included are 30 McWilliams tampers, 22 TieMasters, 17 SpikeMasters and 13 LineMasters. Delivery is to begin immediately and extend through 1955.

Wants AAR to Study Pricing

Shoemaker sees necessity for more facts on pricing opportunities and cost data on rails and rivals

A railroad president wants the Association of American Railroads to establish a research organization which would develop "more facts about our pricing responsibilities and opportunities" and about costs of the railroads and of their competitors. He is Perry M. Shoemaker, president of the Lackawanna.

He made his idea public in an address before the Buffalo Traffic Club's annual dinner February 15.

The speaker based his plea for this new kind of research on the belief that the railroad rate structure today does not meet all the tests of modernity.

He is of the further opinion that railroad traffic officers have not, in all instances, given proper weight "to our great dependence upon volume."

Requirements for rates — Mr. Shoemaker set forth eight requirements for a railroad rate structure to meet today's demands which seem outstanding:

(1) "It must stand the test of reasonableness.

(2) "It must be non-discriminatory.

(3) "It must recognize the cost of service. Rates, below which we should not go, should include all items of expense, not only labor, fuel and maintenance but dividends, depreciation, obsolescence, interest, taxes and claims. I mention these things to illustrate the difficulty of arriving at even approximations of railroad costs when we try to separate cost factors on various kinds of commodities handled in the same train and in the same yards, yet fundamentally given very different kinds of service.

(4) "It must stimulate volume—attractive and profitable traffic.

(5) "By recognizing costs, it must discourage traffic which other forms of transportation inherently can handle more economically.

(6) "It must discourage fraud.

(7) "It should provide simplified office procedures.

(8) "It should be easily understood by our customers."

Parallel with utilities—Mr. Shoemaker admitted to having "done considerable reading" in the field of electric power rates—which he characterized as having an "incentive characteristic of declining rates for increasing increments of consumption." He referred to the doctrine of Dr. John Hopkinson, made in 1892, which included the then shocking observation: "The charge for a service rendered should bear some relation to the cost of rendering it." Not much later, Arthur Wright stated: "No manufacturing undertaking can be considered to trade on a sound commercial basis, unless it has ascertained to some degree of accuracy the cost of providing the commodity it produces."

Mr. Shoemaker believes the statements of these early electric leaders have their place today. He contends however, that "it is a very different picture to talk about problems of pricing a single commodity than it is pricing the complex industrial commodities of this country." When it is considered, he recalled, that there are some 20,000 items in the freight classification, railroad freight rates cannot be reduced to the simplicity of the utilities.

"But our rates, as such, are not scientific conclusions arrived at in a laboratory. They are the result of conflicting transportation and commercial forces — transportation costs balanced against the need of the railroad for volume traffic, competition among railroads and between products and between producers, each seeking the widest possible range of markets and sources of supply. We indeed have charged what the traffic would bear. Our industrial development, with its dependence upon raw materials inbound and distribution of manufactured goods outward, has become a fabric of this very situation. Rates are the result not only of present day pressures and competitive conflicts but of those which have operated in the past. Relationships long established to which business was adjusted and around which communities were established cannot be overturned lightly."

INDEX TO VOLUME 137

The index to the latest volume of *Railway Age*, July-December 1954, is ready for distribution, and copies may be obtained by those subscribers desiring them. Requests should be addressed to Circulation Department, *Railway Age*, 30 Church st., New York 7. Subscribers who have, in previous years, made application for the index need not apply again.

Allowance For "Piggyback" Trailers Gets ICC Study

The ICC has suspended a "piggyback" tariff in which a railroad proposed to establish an allowance for shippers who furnish their own trailers and perform their own transportation within terminal areas.

Filed by the Chicago & Eastern Illinois, the tariff was scheduled to become effective February 15. It was to apply connection with trailer-on-flat car commodity rates between Chicago and St. Louis.

Under the proposal, a shipper would deliver his trailer to the railroad ramp for loadings; at destination the railroad would "land" the trailer and turn it over to the shipper-consignee at "rampside." In return for furnishing

"S" TYPE TRESTLE crosses a ravine on the new 43-mile British Columbia railroad line which links Kitimat, site of what is said to be the world's greatest aluminum ore processing plant, with Terrace, on the Canadian National's northern transcontinental main line.

the trailer and performing his transportation, the shipper would receive an allowance of 18.5 cents.

The commission's suspension of the C&EI tariff runs until September 15. The case is docketed as I.&S. No. 6340.

Milwaukee Asks ICC Raise Chicago Suburban Fares

The Milwaukee has filed with the Interstate Commerce Commission an application seeking an increase in passenger fares in its suburban Chicago service. It would have the commission override the Illinois Commerce Commission, which has denied an application for fare increases in Illinois intrastate service.

The application states that the road applied to the Illinois commission in 1952 to raise its fares and discontinue some service but the application was rejected November 10, 1954. The last increase allowed the Milwaukee was in September 1951, the application says, and the road is now losing $700,000 per year out-of-pocket.

The ICC was asked to investigate the situation and raise fares between Walworth, Wis., and Elgin, Ill., on one hand, and Chicago on the other, with corresponding revisions for intermediate points. One-way trip fares would be charged at 3.2 cents a mile rather than 2.5 cents, the application states, with round-trip and multiple-trip tickets to be based on resultant one-way fares. Commutation fares would be raised by 40%.

Roads Got 5.6% of Value Of Goods Hauled in 1953

Freight revenues of Class I railroads came to 5.64% of the destination value of commodities they transported in 1953 according to the Bureau of Transport Economics and Statistics, Interstate Commerce Commission.

This was a slight increase over the 5.51% ratio in 1950, the last previous year reported on.

In this study, its ninth analysis of the relationship between the commodity values and freight revenues, the bureau showed that the railroads' revenues totaled $9,350,314,000 in 1953, about 15% higher than the 1950 figure of $8,143,383,000. The value at destination of the commodities hauled was $165,820,436,000 in 1953 and $147,920,522,000 in 1950, an increase of 12%, the report showed.

The 1953 and 1950 analyses were made, the bureau stated, on a basis that included 262 commodity classes whereas analyses made for earlier years used a base of only 157 classes. For this reason, the report noted, comparisons between years 1946 and earlier with the years 1950 and 1953 may not be strictly accurate although in some commodities where old classfications were maintained, comparisons were said to be valid.

The bureau noted that its study was issued "as information" and had not been "considered or adopted" by the ICC. It warned further that the data presented "cannot properly be used to indicate whether freight rates are too high or too low or as an indication of the reasonableness of rates."

Ratios of gross freight revenues to values at destination by commodity groups[1]

Year	Total	Products of agriculture I	Animals and products II	Products of mines III	Products of forests IV	Manufacturers and miscellaneous[2] V-VI	L.C.L. VII
1928	7.90	10.01	2.73	26.74	12.96	5.42	6.94
1930	6.67	11.53	3.46	33.16	18.26	4.02	4.13
1933	10.66	13.67	6.99	35.95	21.12	6.30	9.19
1936	8.47	9.57	4.10	30.44	15.38	5.51	8.46
1939	8.43	12.24	4.59	28.29	13.78	5.30	8.33
1941	7.26	10.25	3.71	29.12	12.65	4.66	7.27
1946	5.46	5.58	2.68	23.13	12.80	3.88	5.46
1950	5.51	6.33	2.88	28.59	12.66	4.27	1.85
1953	5.64	7.16	3.66	25.27	13.06	4.14	2.46

[1] For the years 1928-46 the base was 157 commodity classes; in 1950 and 1953 it was 262 such classes.
[2] Includes forwarder traffic.

KATY PASSENGER REVENUES WENT UP IN 1954

One of the few railroads to show an increase in passenger revenues in 1954, compared to 1953, was the Missouri-Kansas-Texas. The road's 2%-plus gain is attributed by E. A. Bohmeyer, passenger traffic manager, to two factors:

(1) An increase in military traffic achieved largely by a new policy of making Section 22 quotations for group movements *quickly*. Military business currently accounts for about 30% of the road's passenger revenue.

(2) Reduced round-trip coach fares put in effect last June between Denison, Tex., and San Antonio and all intermediate points. These were put on sale daily at a rate of about 1.5 cents a mile—a reduction of 33 1/3%. Mr. Bohmeyer tells *Railway Age* that, before these rates went into effect, local revenues between these points showed a decrease of over 13%; the lower rate brought an actual increase of over 3%. These fares were to have expired at the end of 1954, but have been extended for another year because of their success

On January 15, this year, the road cut its one-way coach fares in this same territory to meet competitive bus fares. The reduction was about 14%—less than the earlier round-trip reduction, so as not to discourage sale of round-trip transportation.

Education

14 Railroaders Complete Traffic Course at AU

Fourteen railroad men were among 110 students who completed the course of the Seventh Institute of Industrial Transportation and Traffic Management conducted last month at the American University, Washington, D.C.

The institute closed with a January 28 luncheon session at which certificates were awarded to the students. The program also included an address by Jack Garrett Scott, general counsel of the National Association of Motor Bus Operators, who was formerly under secretary of commerce for transportation.

Edward F. Lacey, former executive secretary of the National Industrial Traffic League, was director of the institute. The class president was E. C. Burns, city freight agent of the Santa Fe at Tulsa, Okla.

Law & Regulation

NMB Won't Take Position On "Third Party Notice"

The National Mediation Board will not accept the U.S. Supreme Court's invitation to file a brief in a case involving the "third-party-notice" controversy at the National Railroad Adjustment Board.

The board has so advised the attorney general, saying it does not care to take any position other than to call the court's attention to the desirability of ending the controversy. This advice went to the attorney general after the court had made known its "readiness to accept any brief" NMB might wish to file.

The case is docketed in the Supreme Court as No. 131, *Whitehouse v. Illinois Central*. The issue is whether or not NRAB's Third Division must give formal notice to the Brotherhood of Railway Clerks and thus make that union a party to a case wherein the Order of Railroad Telegraphers is claiming a position held by a BRC member.

The division's failure to give such notice had the effect of barring the BRC and its member from the case brought by ORT. The IC went to court and got an injunction which has restrained the division from proceeding any further in the case unless it gives notice to BRC and its member.

That determination of the federal District Court at Chicago was upheld by the Seventh Circuit Court of Appeals, to which it was appealed by the division with support of the unions. Their further appeal brought the case to the U.S. Supreme Court.

Traffic

ICC Examiner Would Okay East's "Piggyback" Tariffs

The Interstate Commerce Commission has been advised by one of its examiners to reject motor-carrier contentions that it should subject railroad "piggybacking" service to a requirement stipulating that rates for the service must be "no lower than actual bona fide truck competitive rates."

The examiner, M. L. Boat, said in a proposed report that this "broad finding" sought by the motor carriers was "not warranted" by evidence of record in the case. The case is I. & S. Docket No. 6214, which involves tariffs covering trailer-on-flat-car services offered to shippers by six eastern railroads. Mr. Boat recommended approval of the tariffs as now published, and discontinuance of the proceeding.

The railroads are the Baltimore & Ohio, the Lackawanna, the Erie, the Nickel Plate, the Pennsylvania, and the Wabash. The tariffs, originally filed to become effective June 16, 1954, were suspended by the commission. However, the suspension was lifted in July, and the tariffs have since been in effect while the commission's investigation of them has proceeded.

During the course of the investigation, the truckers withdrew their opposition, having decided that the t-o-f-c operations had not become a "serious competitive factor." They nevertheless sought the rate-floor finding which the examiner advised the commission not to make.

Other protestants in the case are terminal companies with facilities in Brooklyn, N.Y. They have raised legal questions as to the railroads' authority to serve Brooklyn with t-o-f-c operations involving highway movements based on stations in New Jersey. A similar issue was raised as to the terminal area at Chicago. As to both situations, the examiner advised the commission to find that the highway movements are "bona fide collection and delivery service incidental to transportation by railroads," and thus exempt from the Motor Carrier Act's certificate and permit requirements.

Tariff Simplifiers Made Progress in '54

The Railroad Tariff Research Group's 1954 acitivities on the fourth-section phase of its program were "particularly worthwhile," according to John W. Peters, chairman of the National Industrial Traffic League's Cooperating Committee.

The fourth-section program involves one of the group's "knottiest problems," as Mr. Peters put it. It brought forth the pending application wherein the railroads have asked the Interstate Commerce Commission for general relief from the fourth section's long-and-short-haul clause to permit carriers with indirect routes to meet the competition of direct routes, without circuity limitations of any kind.

Mr. Peters' statement was made after his review of a report on 1954 activities of the group which was made by the railroad Administrative Committee charged with supervision of the group. The NITL committee works with this railroad committee. Charles S. Baxter is chairman of the group.

"We are also pleased," Mr. Peters further said, "with the progress which was being made toward the end of the year in arriving at a solution for cancelling the old class-rate tariffs in the so-called 28300 territory."

Status of Program—The report's statement as to the year-end status of the group's whole program was as follows:

"The first phase of the program which was concerned almost wholly with physical or mechanical aspects of tariff making is now virtually completed. It should be possible to conclude action by mid-1955 on a few subjects which remain on our docket and several subjects relating to this phase now being developed by the group for our consideration.

"Some considerable progress has been made in the second phase which comprises, in the main, substantive matters which make for complexity in tariff determinations. Among these are rate alternations, routing, intermediate rules, and commodity descriptions. These are exceedingly difficult problems. Most of them require also consideration by rate-making authorities. In the very nature of things progress in this field cannot be as rapid as it has been with respect to first phase matters.

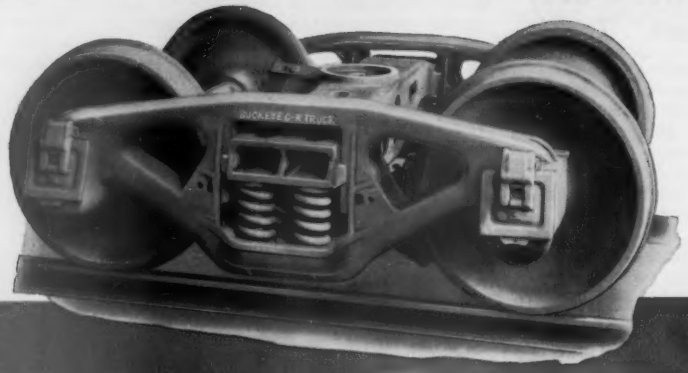
"The group's studies into third phase matters (special services tariffs) are well advanced, and we will have for consideration this year reports respecting diversion and reconsignment, stopping in transit, milling, processing or storing in transit and related subjects. This is another exceedingly complex field and numerous questions are likely to exceed our authority and thus require reference to the rate organizations before we can dispose of them.

"The group is also engaged in a study of the rules of Tariff Circular 20 other than those affected by the 55 proposals released in 1954. The objective here is the complete reissue of the tariff circular. We expect to be able to complete

JANUARY WAS "RAILROAD MONTH" FOR CUB SCOUTS

For the second time in recent years, railroads and railroading provided, in January, a month-long "study theme" for the nation's Cub Scouts. Typical of cooperation extended to the Cubs by railroads all over the country were programs put on at Pittsburgh (left) and Baltimore (right). At the Pennsylvania city, the New York Central, the Pittsburgh & Lake Erie, the Pennsylvania, the Baltimore & Ohio, and the Union worked with the Eastern Railroad Presidents Conference Pittsburgh Community Relations Committee to give the Cubs some inside knowledge of railroading. At Baltimore, the B&O's Transportation Museum was a center of interest; on January 15 alone it was visited by more than 4,000 youngsters from the Philadelphia area.

FOR EFFECTIVE 'CUSHIONING' ACTION BETWEEN LADING AND ROADBED . . .



Buckeye C-R.

(Cushion Ride) TRUCKS

. . . include the best combination of time-proven features and modern improvements.

- Integral box side frames with Buckeye inverted U-Section tension members.
- Full box-section bolster ends protected by hardened steel wear plates.
- Most effective control of alignment, and vertical and lateral motion provided by simple, durable parts.
- Symmetrical friction wedges of hardened cast steel with full width, long wearing bearing surfaces.
- Low rate friction wedge springs for uniform action over a long period of service.
- Easy visual inspection of "cushioning" control parts.
- Easy to assemble and dismantle.
- Superior riding qualities and long, maintenance-free service.

The Buckeye Steel Castings Co.

★ COLUMBUS, O.
★ NEW YORK, N.Y
★ CHICAGO, ILL.
★ ST. PAUL, MINN.

FOR COMPLETE INFORMATION . . CALL OR WRITE

Refer Adv. No. 11877

Ask for Bulletin No 201. .

our consideration of that subject in 1955."

This statement was followed by a discussion of "the responsibility of others for tariff simplification." In that connection the report said in part:

"On some of the subjects most vital to tariff simplification the joint committee can do no more than endorse a set of principles and look to those engaged in rate-making activities to carry them out. We can neither require the observance of these principles nor supervise the methods or manner of performance. Thus the measure of progress made in these important areas is dependent upon the stewardship of the rate committees and all the railroads working individually and through their established organizations."

In Congress

Bills in Congress

Several additional bills of interest to the railroads have been introduced in Congress since the latest previous listing in *Railway Age* of January 31, page 11. They include those listed below, together with their sponsors.

Introduced in House— H.R.2573, to amend the Railroad Retirement Act (Cunningham, Iowa).

H.R.2591, to amend the Railroad Retirement Act "to provide that the annuity of the widow of a deceased employee shall not be reduced on account of certain benefits to which she may be entitled under the Social Security Act" (Gray, Ill.).

H.R.2816, to amend the Interstate Commerce Act to require the establishment by truckers of through routes and joint rates (Boggs, La.).

H.R.3087, to amend the Railroad Retirement Act (Bennett, Fla.).

H.R.3125, to put "agricultural exemptions" in the Civil Aeronautics Act (Miller, Cal.).

H.R.3129, to amend the Interstate Commerce Act to require that vehicles of motor carriers be equipped with front and rear bumpers (Moulder, Mo.).

H.R.3252, "to provide relief against certain forms of discrimination in interstate transportation" (Heselton, Mass.).

H.R.3301, to prohibit the segregation of passengers on the basis of race or color (Dollinger, N. Y.).

H.R.3401, to amend the Railroad Retirement Act to reduce from 65 to 60 the age at which a spouse's annuity becomes effective (Boyle, Ill.).

H.R.3416, to amend the Railroad Retirement Act and the Social Security Act to eliminate those provisions which restrict the right of a spouse or survivor to receive benefits simultaneously under both acts (Cunningham, Iowa).

H.R.3607, to amend the Railroad Retirement Act to provide full annuities for individuals who have completed 30 years of service and to liberalize the act's minimum annuity provisions (O'Brien, N. Y.).

H.R. 3612, to amend the Railroad Retirement Act (Rogers, Colo.).

H.R.3719, to repeal provisions of the Railroad Retirement Act which reduce the annuities of spouses of retired employees, and the survivors of deceased by the amount of "certain" benefits payable under the Social Security Act (Winstead, Miss.).

H.R.3743, to amend the Railroad Retirement Act to provide that the annuity of the widow of a decesaed employee shall not be reduced on account of any benefits to which she may be entitled under the Social Security Act (Beamer, Ind.).

H.R.3768, to repeal the excise tax on transportation of coal (Flood, Pa.).

H.R.3795, to amend the Railroad Retirement Act (Poff, Va.).

H.R.3796, to amend the Railroad Retirement Act to provide that the annuity of the widow of a deceased employee shall not be reduced on account of any benefits to which she may be entitled under the Social Security Act (Poff, Va.).

H.R.3826, to provide that railroad employees may retire on full annuity at age 60 after 30 years of service, and to fix the minimum annuity of such annuitants (Powell, N.Y.).

H.R.3894, to expand the St. Lawrence seaway project (Dingell, Mich.).

H.R.3930, to provide for maintenance of a 9-ft. channel in the Minnesota river (O'Hara, Minn.).

H.R.3938, to amend the Railroad Retirement Act (Radwan, N. Y.).

H.R.3994, to require truckers to establish through routes and joint rates (Boggs, La.).

Introduced in Senate—S.898, the so-called trip-lease bill, which would end the Interstate Commerce Commission's authority to ban trip-leasing of motor vehicles (Smathers, Fla., and Monroney, Okla.).

S.951, to amend the Interstate Commerce Act to remove the bulk-commodity exemption applicable to water carriers (Magnuson, Wash., by request).

S.961, to expand the St. Lawrence seaway project (Humphrey, Minn.).

S.1052, to expand the St. Lawrence seaway project (Langer, N. D.).

Competitive Transport

Census Bureau Gives Truck Movement Data

Private and exempt truckers carry about one-twelfth of the freight hauled by railroads on a ton-mile basis, judging from a 1953 survey conducted by the Transportation Division of the Bureau of the Census. Over a three-month period these truckers accounted for 10.1 billion ton-miles of all commodities, as compared to 120.1 billion logged by railroads.

Private truckers were defined as those who own both trucks and commodities carried in them; exempt carriers as those who operate "for hire" but are exempt from Interstate Commerce Commission regulation.

The truck data were built up from a sample which included "detailed reports covering only one week for each of about 5,800 vehicles owned by slightly less than 2,500 persons or firms," according to the survey's summary. It added that "estimates of total tons and ton-miles from that relatively small sample were found to have sampling errors of about 10%." The survey was limited to shipments of more than 25 miles; the private and exempt carriers covered, the report said, account for about 65% of the truck ton-miles in urban, rural and inter-city service.

These truckers were shown to have hauled greater tonnages than the railroads in some commodities but only in the hauling of dairy products and poultry and poultry products did they amass greater ton-mileage.

The truckers actually carried 16.4 million tons of petroleum products against 8.3 million for railroads, but their ton-miles for this commodity came to only 1.4 billion where the railroads totaled 3.1 billion ton-miles. The truckers accounted for 10 times the ton-miles accounted for by railroads hauling poultry and poultry products, and about 2.5 times as many in the haulage of dairy products. The railroads, however, had marked edges in carrying all agricultural, mine, forest and manufactured products, totaling 14.3 billion, 45.8 billion, 11.6 billion and 45.6 billion ton-miles in those commodities, respectively, as against 1.5 billion, 373.5 million, 573.8 million, and 6.3 billion for the exempt and private truckers.

UNION PACIFIC gave away 225,000,000 matches last year—by the "carload," 25 books to the car, each car being a miniature reproduction of UP rolling stock. H. B. Northcott, UP general advertising manager, holds two of the units, which are distributed in quantity to the road's general agents who, in turn, furnish them to shippers, receivers and other railroad patrons.

Air Lines, Trucks Made Big Gains in 1939-53 Period

Railroad revenues failed by a wide margin to keep pace with the growth in national income between 1939 and 1953 when air line revenues increased about four times as rapidly as national income and revenues of truckers rose about one and one-half times as fast.

This showing was made in figures published by the Interstate Commerce Commission's Bureau of Transport Economics and Statistics in its "Monthly Comment." Bus and pipe line companies also failed to keep pace with national income, but their slippage

was not as great as that of the railroads.

The figures showed that, on the basis of 1939 as 100, the 1953 index for national income was 420.7. The 1953 indices for carrier revenues were these: Railroads, 273.2; truckers, 621.9; bus companies, 363; air lines, 1,677.1; pipe lines, 278.2.

Ratios showed that railroad gross in 1939 was equivalent to 5.6% of national income. The comparable 1953 figure was 3.6%. Meanwhile, the truck ratio rose from 1.1% to 1.6%, while that of the air lines rose from 0.1% to 0.3%.

The bureau's discussion of the figures noted that revenues of the air lines "are somewhat understated because of the omission of non-scheduled lines, which have assumed some importance in recent years." It was also explained that motor carrier figures include only carriers holding operating authorities issued by the ICC.

Ohio PUC Revises Charges Vs. Riss

The Ohio Public Utilities Commission has filed an amended complaint against Riss & Co., Kansas City interstate trucker, in which the PUC informs the Interstate Commerce Commission that Riss' drivers amassed 792 violations in Ohio alone within a four-year period. All the violations cited, the complaint stated, were of a type which would permit the ICC to investigate the trucker's fitness to operate. The PUC itemized 305 traffic infraction convictions, 191 convictions for violations of PUC rules, and 296 PUC violations on which Riss was notified but no arrests were made. Ohio had accused Riss of 1,272 violations (*Railway Age*, August 2, page 28) but some of these were held as not being subject to ICC considerations.

Roads Protest McLean Sea-Land "Subterfuge"

Seven roads have protested that Malcolm P. McLean's plan to establish "sea-land" service to Atlantic Coast and Gulf ports would be in "circumvention" of the Interstate Commerce Act.

They accuse McLean of resorting to a "subterfuge" in placing his allegedly controlling stock interest in the McLean Trucking Company in a voting trust while purchasing the Pan Atlantic Steamship Corporation and Gulf Florida Terminal Company in the name of the McLean Securities Corporation.

The seven roads — Atlantic Coast Line; Baltimore & Ohio; Louisville & Nashville; New Haven; Pennsylvania; Seaboard, and Southern—maintained in a complaint filed with the Interstate Commerce Commission that McLean will actually exercise control of both the truck company and the steamship line. This, they state, is a violation of section 5 of the act. The roads asked the commission to start an investigation of the transactions and to determine whether any of the parties to them have violated the Clayton Act. The roads assert that McLean's proposed sea-land operations are opposed by competing truck and water lines and the shipping public as well as themselves, as being "contrary to the public interest."

Seatrain Keeps Broad N.Y.-Savannah Rights

The Interstate Commerce Commission has refused to limit the New York-Savannah operation of Seatrain Lines to the service of transporting freight in loaded freight cars, empty freight cars, and liquid cargoes in vessel tanks.

Reporting on reconsideration of the case which it decided originally last April, the commission affirmed that decision's ruling that Seatrain should have permanent rights to transport "commodities generally" on the route.

The reopening to consider the limitation proposal was in response to a petition filed by the Seaboard Air Line and Atlantic Coast Line. Commissioner Freas, concurring-in-part, said he would have imposed the limitation, and Chairman Mitchell and Commissioner Elliott subscribed to his views.

People in the News

H. D. McCoy Named Secretary of ICC

Harold D. McCoy, assistant chief examiner of the Interstate Commerce Commission, has been named to be the sixth secretary of the commission as of March 1. He succeeds George W. Laird, whose retirement, effective February 28, was reported in *Railway Age*, February 14, page 10.

Mr. McCoy, who played a major role in the complete revision of the commission's general rules of practice in 1942, has been assistant chief examiner since June 1947. Now 54, he has been with the ICC since 1921, except for the years 1942 to 1946, when he was in the Army.

After two years service as an assistant clerk with the House Committee on Interstate & Foreign Commerce, he transferred to the ICC in 1921 to join the personal staff of Commissioner John J. Esch. Mr. McCoy later was with the Bureau of Informal Cases, the Bureau of Formal Cases and the Bureau of Motor Carriers before being made assistant chief examiner, Bureau of Formal Cases.

He is a native of Sparta, Wis., and holds a BA degree from George Washington University and an LLB degree from the University of Wisconsin. He is a member of the bar of the Wisconsin Supreme Court, the United States District Court, and the District of Columbia Supreme Court and Court of Appeals. Mr. McCoy served as executive officer of the Third Transportation Zone, Baltimore, during World War II and holds the rank of colonel in the Army Transportation Corps reserve.

Harris & Ewing

Harold D. McCoy

He is now a member of a committee considering further revision of the commission's rules of practice.

Dr. Stevens, ICC Bureau Chief, Will Retire Feb. 28

William H. S. Stevens, director of the Interstate Commerce Commission's Bureau of Transport Economics and Statistics since 1944, will retire February 28.

His retirement will end a 39-year career of service with the federal government, about half of it with the ICC. Dr. Stevens has also been instructor and professor on college faculties, and a well-known writer on economic subjects.

He was born in 1885 at Eau Claire, Wis., and received his AB degree from Colby College in 1906. He then became a fellow in political science at George Washington University, where he was awarded an AM in 1909. During the next two years he was a fellow in economics at Cornell University, also

BACHRACH

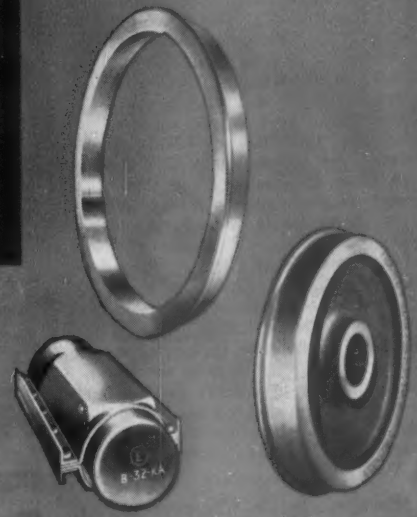
William H. S. Stevens

Two Road Systems at Work! By Hungerford

We will be glad to send you enlarged copies of this Hungerford cartoon (without advertising copy) for posting on your office and shop bulletin boards, or a cut for your company magazine, at cost.

E Edgewater Steel Company

PITTSBURGH, PA.



Serving America's Railroads

ROLLED STEEL TIRES
with ROLLED STEEL WHEELS
AND DRAFT GEARS

doing graduate work at the University of Chicago during summers. He received his PhD from the University of Pennsylvania in 1912.

Meanwhile, Dr. Stevens served during 1911-1912 as an assistant instructor of economics at that university's Wharton School. From 1912 until 1915 he was instructor of business organization and finance at Columbia University; and in 1915-1916 was professor of business management at Tulane University.

Dr. Stevens' career with the federal government began in 1916, when he joined the staff of the Federal Trade Commission as a special expert. The following year he became FCC's assistant chief economist, remaining in that position until he went to the ICC in 1936 as assistant director of the Bureau of Transport Economics and Statistics. He continued in that position until his 1944 appointment to the bureau directorship.

Meanwhile, Dr. Stevens continued his educational work, serving in turn as lecturer and professor of marketing and finance at American University and the University of Maryland, and as lecturer at Johns Hopkins University. In 1947 Colby awarded him an honorary degree of Doctor of Social Science. His writings include Railway Sinking Funds and Funded Debt (1939); Railway Dividends (1944); and articles on finance, marketing, monopoly, and transportation.

Financial

Gilberts Denied Entry In Alleghany Case at ICC

The Interstate Commerce Commission has denied Lewis D. Gilbert and John Gilbert the right to intervene in the Alleghany Corporation's bid to retain carrier status (*Railway Age*, September 27, 1954, page 52). The Gilberts, described in their petition as independent stockholders in Alleghany and New York Central, asked the ICC to dismiss Alleghany's motion for want of jurisdiction. Division 4 of the commission ruled that the interests of the petitioners were not shown to be different from other stockholders and that "indirectly related matters" introduced by the Gilberts would only broaden the issues.

In a separate application, Breswick & Co. of New York City asked the commission for the right to intervene in the case, claiming that Alleghany Corporation had forfeited its carrier status when it sold its holdings in the Chesapeake & Ohio. Alleghany filed an answer, calling on the commission to dismiss Breswick's application. Breswick described itself as a private investor in Alleghany.

Missouri Pacific.—*Trackage Rights Modification.*—The ICC has approved acquisition by this road of trackage rights over 10.7 miles of the Union Pacific between Gilmore Junction, Neb., and the UP passenger station at Omaha. The arrangement supplants an old agreement with respect to 4.8 miles of track at Omaha.

White City Terminal.—*Operation.*—The ICC has authorized this road to operate its existing line of railroad within the unincorporated area known as White City, Ore. (*Railway Age*, November 29, 1954, page 19).

Yancey. — *Acquisition of Black Mountain.*—The Yancey, incorporated February 2, has applied to the ICC for authority to acquire and operate the properties of the Black Mountain which has been abandoned (*Railway Age*, July 26, 1954, page 60). The new road would finance the acquisition by sale of stock. It advised the commission $75,000 of its stock has already been subscribed and it plans to issue $150,000 additionally. The Yancey, formed by patrons of the old Black Mountain, would run from a connection with the Clinchfield at Kona, N.C., to Burnsville with a branch from Micasville to Bowditch, a total of 14 miles.

Figures of the Week

Freight Car Loadings

Loadings of revenue freight in the week ended February 12 totaled 643,859 cars, the Association of American Railroads announced on February 17. This was an increase of 3,124 cars, or 0.5%, compared with the previous week; an increase of 20,153 cars, or 3.2%, compared with the corresponding week last year; and a decrease of 37,745 cars, or 5.5%, compared with the equivalent 1953 week.

Loadings of revenue freight for the week ended February 5 totaled 640,735 cars; the summary for that week, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, February 5

District	1955	1954	1953
Eastern	110,483	110,328	125,475
Allegheny	115,889	120,942	146,392
Pocahontas	50,371	44,504	47,424
Southern	126,834	120,003	128,438
Northwestern	72,235	69,382	72,322
Central Western	109,425	103,407	112,383
Southwestern	55,498	55,819	58,179
Total Western Districts	237,158	228,608	242,884
Total All Roads	640,735	624,385	690,613
Commodities:			
Grain and grain products	44,592	43,836	42,957
Livestock	7,306	6,172	6,229
Coal	127,337	113,465	119,633
Coke	10,275	9,305	15,551
Forest products	43,864	40,656	44,947
Ore	12,662	16,307	19,510
Merchandise l.c.l.	61,243	64,782	70,304
Miscellaneous	333,456	329,862	371,482
February 5	640,735	624,385	690,613
January 29	641,979	628,193	697,442
January 22	635,653	617,213	697,515
January 15	644,940	619,871	705,017
January 8	602,203	624,229	688,110
Cumulative total 5 weeks	3,165,510	3,113,891	3,478,697

Securities

Baltimore & Ohio. — *Refunding Plan.*—The ICC has exempted this road from competitive bidding requirements in the sale of $345 million of bonds or other obligations as part of a refunding plan (*Railway Age*, February 7, page 56). The road informed the commission that it was now paying interest of up to 6% on its outstanding securities and that it wished to refund some or all of its bonds to reduce the interest charges and simplify its capital structure. Division 4 said that, with "not less than 60% of the (B&O) outstanding bonds held by institutional investors . . . it is believed possible that a substantial part of the refunding operation can be accomplished at less expense through exchange offers to such institutional investors." It added that it is likely the refunding will involve a combination of exchange offers to bond holders, sales of new bonds to institutional investors and the underwriting and public offering of such new bonds as may not be exchanged or sold. The commission will require the B&O to submit applications for the actual issuance of bonds or other obligations for approval in subsequent proceedings.

Authorization

BANGOR & AROOSTOOK.—To issue 7,089 shares of $50-par common stock to be distributed to stockholders on the basis of one additional share for each 20 held (*Railway Age*, January 17, page 27).

Security Price Averages

	Feb. 15	Prev. Week	Last Year
Average price of 20 representative railway stocks	88.98	85.61	62.13
Average price of 20 representative railway bonds.	99.02	98.35	94.10

Dividends Declared

BANGOR & AROOSTOOK.—common, 5%; 5% preferred, $1.25, quarterly; both payable April 1 to holders of record March 7.

CHESAPEAKE & OHIO.—common, 75¢, quarterly, payable March 21 to holders of record March 1; 3½% convertible preferred, 87½¢, quarterly, payable May 1 to holders of record April 7.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—preferred A, $5.00, payable March 11 to holders of record February 19.

ERIE & KALAMAZOO.—$1.50, paid February 15 to holders of record January 31.

ERIE & PITTSBURGH.—87½¢ quarterly, payable March 10 to holders of record February 28.

KALAMAZOO, ALLEGAN & GRAND RAPIDS.—$2.95, semiannual, payable April 1 to holders of record March 15.

PHILADELPHIA & TRENTON.—$2.50, quarterly, payable April 10 to holders of record April 1.

PITTSBURGH, FORT WAYNE & CHICAGO.—common, $1.75, quarterly, payable April 1 to holders of record March 10; 7% preferred, $1.75, quarterly, payable April 5 to holders of record March 10.

ST. LOUIS-SAN FRANCISCO.—common, 37½¢, payable March 15 to holders of record March 1; 5% convertible preferred A, $1.25, quarterly, payable March 15 to holders of record March 1; 5% convertible preferred A, $1.25, quarterly, payable June 15 to holders of record June 1; 5% convertible preferred A, $1.25, quarterly, payable September 15 to holders of record September 1; 5% convertible preferred A, $1.25, quarterly, payable December 15 to holders of record December 1.

VIRGINIAN.—62½¢, quarterly, payable March 11 to holders of record February 25.

(Additional news appears on pages 56 and 60)

THE GREATEST ADVANCE IN RAILROADING

...since the diesel locomotive!

A. A. R. APPROVED FOR

NMB Sealed

"Patented" and "Patents Pending"

Eliminates 81.4%* of all hot boxes

and 100% of hot boxes due to waste packing.

- **GREATLY REDUCES** operating costs, eliminates virtually all accidents due to hot boxes.
- **PROVIDES** a modern scientific system of lubrication and dirt exclusion for solid bearing journal boxes.
- **SIMPLE,** inexpensive installation. Requires no change in present journal boxes.

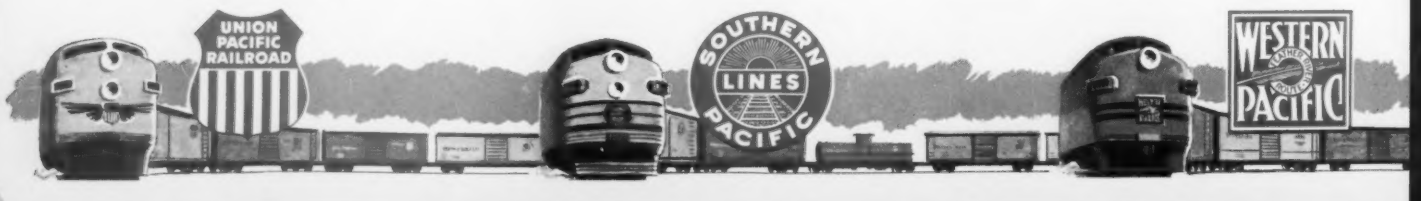
Over three years ago, NMB research engineers began the search for a solution to railroad car hot boxes. Our 33 years of sealing experience indicated an answer could be achieved by eliminating waste packing and sealing the solid bearing journal box so the journal and bearing could operate in a constant lubricant bath.

First came development of a shaft seal to retain lubricant and exclude water, dirt and brine from the rear of the journal box. To insure complete sealing and trouble-free operation, other parts were needed and were developed. These parts comprise the NMB Sealed Journal Box Kit. The Kit may be installed in any standard solid bearing journal box quickly, without alteration.

Performance has been truly remarkable. Experience shows the Kit can produce operating and maintenance savings of at least $6.88 per 1,000 car miles; an average of $116.96 per car per year.

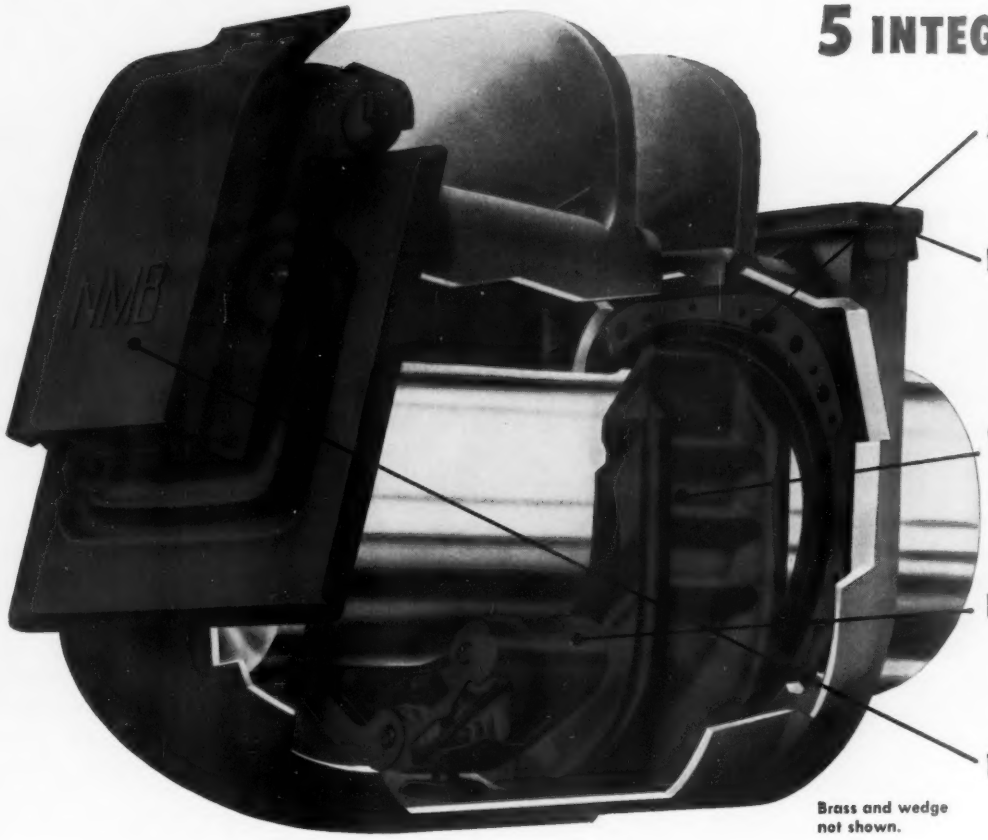
NMB Kits have been tested continuously under all operating and weather conditions for the past three years. Initially, extensive tests were conducted on Union Pacific cars under supervision of Mr. David S. Neuhart, General Superintendent, Motive Power and Machinery, Union Pacific, and Chairman of the Mechanical Division, A.A.R., in collaboration with Mr. Lloyd A. Johnson, President of National Motor Bearing. Subsequently, tests were also conducted by the Southern Pacific under supervision of Mr. B. M. Brown, General Superintendent of Motive Power, and by the Western Pacific under supervision of Mr. E. T. Cuyler, Chief Mechanical Officer.

Today all three railroads have placed production orders for thousands of NMB Sealed Journal Box Kits. The railroads are installing Kits on box cars, piggy-back flats, and other cars where exceptional operating dependability is desired.



INTERCHANGE SERVICE ON 10,000 FREIGHT CARS

Journal Box Kit



Brass and wedge not shown.

5 INTEGRATED PARTS

A. OIL SEAL
Seals lubricant in, seals dust, dirt, water, brine and snow out.

B. DUST GUARD WELL COVER AND FILTER
Excludes dripping water, snow and brine, yet permits breathing of sealed box.

C. JOURNAL GUARD BEARINGS
Cushions journal box assembly against coupling, starting and braking shocks.

D. OIL CIRCULATOR
Constantly delivers large volume of oil to bearings; bearings and journal run 50° cooler.

E. JOURNAL BOX LID
Pressure-tight seal keeps oil in, dirt and water out.

Besides the NMB Kit for solid bearing freight cars, National has made thousands of oil seals for roller bearing railway cars, and over a billion oil seals for America's CARS • TRUCKS • TRACTORS • AIRCRAFT • MACHINES • APPLIANCES

NATIONAL MOTOR BEARING CO., INC.

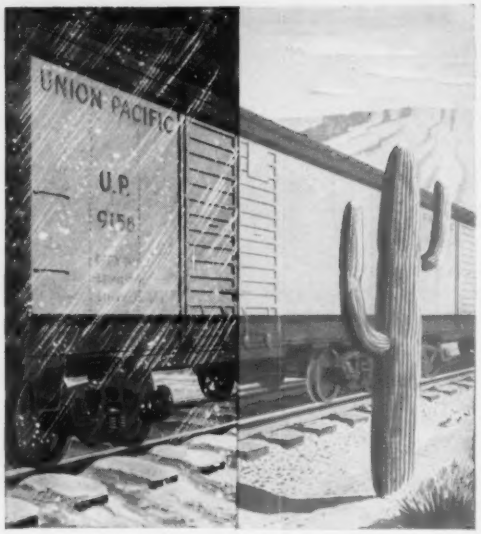
GENERAL OFFICES: Redwood City, California
PLANTS: Redwood City, Downey and Long Beach, California; Van Wert, Ohio

RAILWAY DIVISION DISTRICT OFFICE:
4113 Field Building, 135 S. La Salle Street, Chicago, Illinois

*Based on operating statistics of major Class 1 railroads.

READ MORE ABOUT KIT

NMB KIT proved in over 7,000,000 journal box miles



A. A. R. APPROVED FOR INTERCHANGE SERVICE ON 10,000 CARS

In Union Pacific, Southern Pacific and Western Pacific cars, the NMB Kit has now accumulated over 7,000,000 journal box miles under the most demanding operating conditions. **Operation is so dependable journal boxes equipped with the Kit are inspected only once each 30 days!** Railroad mechanical engineers and motive power superintendents say the following are some of the benefits railroads will realize from NMB Kits:

FAST, SIMPLE INSTALLATION without journal box alteration

1. Journal box is thoroughly cleaned. Locating washer for oil circulator is welded to bottom of box.

2. NMB Oil Seals are placed in dust guard well and side frame is pushed into position on the journals.

3. One guard bearing is inserted on each side of axle, with rubber bearing surface facing axle.

4. After mesh filter is placed in dust guard slot, dust slot cover is snapped into place.

5. Oil circulator is placed in position, and its pedestal installed through opening in locating washer.

6. Installation of NMB journal box lid is quick, simple, actually easier than conventional lids.

ELIMINATE MOST HOT BOXES An estimated 81.4%* of hot boxes are caused by waste packing, poor lubrication, or related causes. No waste packing is used in journal boxes equipped with NMB Kits. ALL HOT-BOXES CAUSED BY WASTE ARE ELIMINATED.

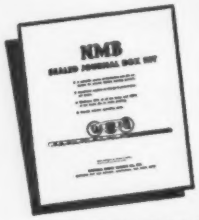
ELIMINATE REPACKING An annual saving averaging $17.10 per freight car per year.

90% LESS LUBRICATING OIL A major Western railroad spends $317,000.00 annually for journal box lubricating oil. Cars equipped with the NMB Kit use only 10% of normal oil requirement.

90% LESS INSPECTION A typical Class 1 railroad spends $2.70 per 1,000 car miles for oiler and inspector labor. Experience shows this cost can be cut to 27c with the NMB Kit.

LONGER JOURNAL AND BEARING LIFE A film lubricant is constantly maintained, and bearing end wear is practically nil.

ELIMINATE VIRTUALLY ALL ACCIDENTS CAUSED BY HOT BOXES!



An informative booklet on the NMB Kit, prepared specifically for mechanical and operating officials of American railroads, will be sent on request.

NATIONAL MOTOR BEARING CO., INC.

GENERAL OFFICES: Redwood City, California
PLANTS: Redwood City, Downey and Long Beach, California; Van Wert, Ohio
RAILWAY DIVISION DISTRICT OFFICE
4113 Field Building, 135 S. La Salle Street, Chicago, Illinois

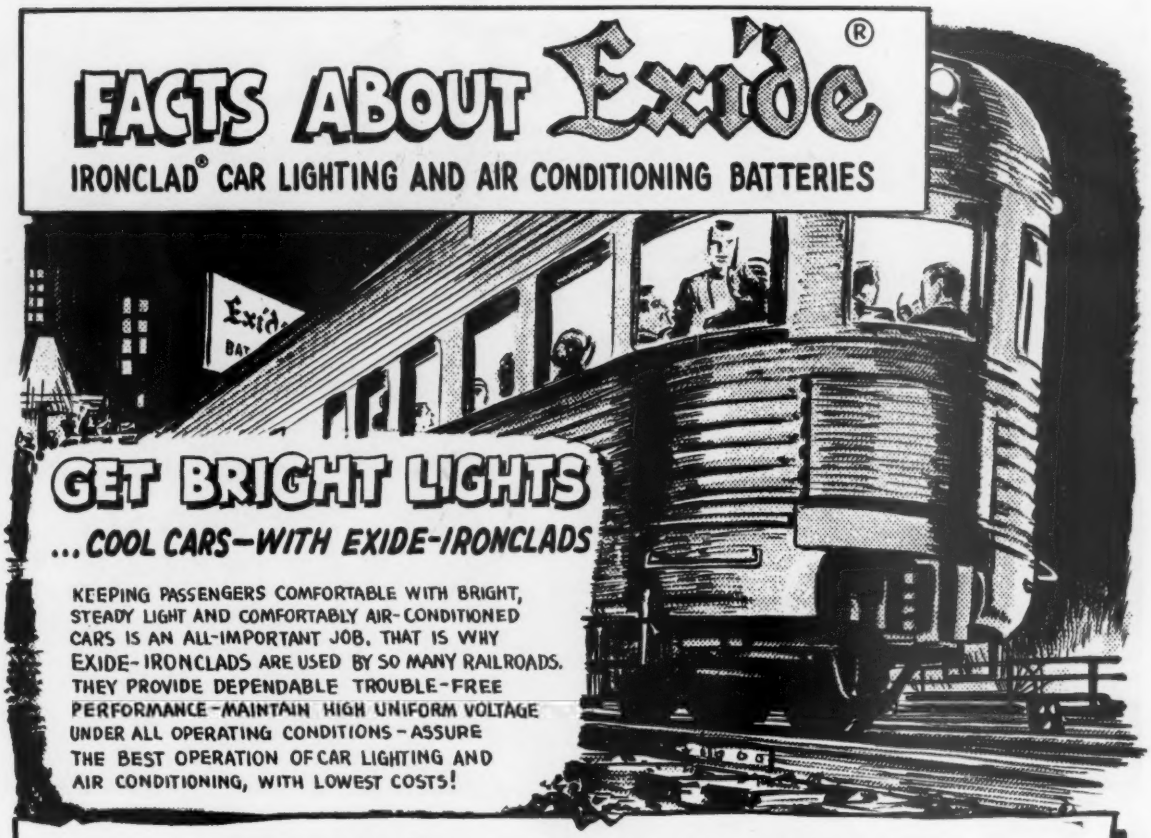
3084

NATIONAL
OIL & GREASE SEALS
O-RINGS SHIMS

OVER A BILLION NATIONAL OIL SEALS supplied for America's automobiles, trucks, tractors, plus millions more for machinery of all types, railway roller bearing journal boxes, aircraft and household appliances.

FACTS ABOUT Exide®

IRONCLAD® CAR LIGHTING AND AIR CONDITIONING BATTERIES



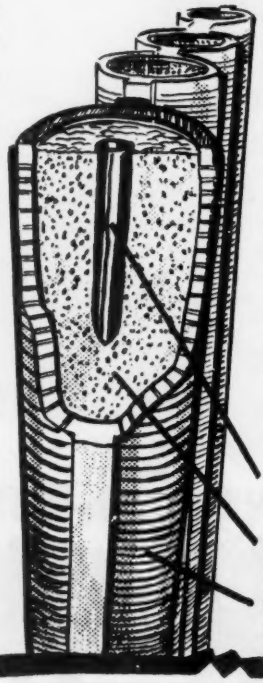
GET BRIGHT LIGHTS

...COOL CARS—WITH EXIDE-IRONCLADS

KEEPING PASSENGERS COMFORTABLE WITH BRIGHT, STEADY LIGHT AND COMFORTABLY AIR-CONDITIONED CARS IS AN ALL-IMPORTANT JOB. THAT IS WHY EXIDE-IRONCLADS ARE USED BY SO MANY RAILROADS. THEY PROVIDE DEPENDABLE TROUBLE-FREE PERFORMANCE—MAINTAIN HIGH UNIFORM VOLTAGE UNDER ALL OPERATING CONDITIONS—ASSURE THE BEST OPERATION OF CAR LIGHTING AND AIR CONDITIONING, WITH LOWEST COSTS!

NATURE'S IDEAL SHAPE

THE CIRCLE WORKS FOR YOU INSIDE AN EXIDE-IRONCLAD

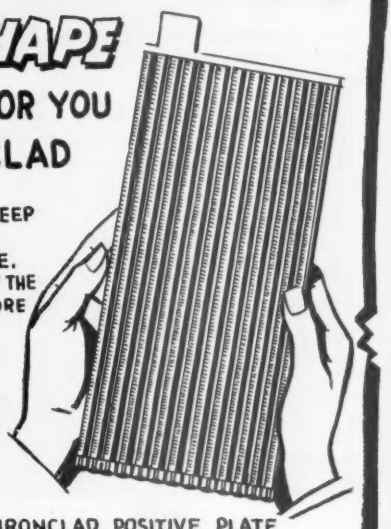


SLOTTED TUBES INSIDE AN IRONCLAD KEEP ACTIVE MATERIAL IN FIRM CONTACT WITH CONDUCTING GRIDS OF THE POSITIVE PLATE. THIS GRID PROTECTION LENGTHENS LIFE OF THE BATTERY. THE SLOTTED TUBES EXPOSE MORE ACTIVE MATERIAL TO THE ELECTROLYTE... FOR GREATER POWER. FINE TUBE SLOTS HOLD MATERIAL IN CONTACT WITH GRID LONGER... RESULT, THE IRONCLAD'S ABILITY TO LIGHT AND AIR CONDITION CARS FOR A LONGER PERIOD OF TIME. THAT IS WHY

EXIDE-IRONCLADS

ARE YOUR BEST RAILWAY BATTERY BUY—

AT ANY PRICE!



IRONCLAD POSITIVE PLATE

LET EXIDE HELP SOLVE YOUR RAILWAY BATTERY PROBLEMS. ❶ CALL AN EXIDE SALES ENGINEER FOR FULL DETAILS. ❷ WRITE FOR FORM 5010, A MANUAL ON MAINTAINING CAR LIGHTING AND AIR CONDITIONING BATTERIES.

Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.

LOW CONDUCTIVITY . . . Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity —.25 btu per square foot, per hour, per degree F., per inch thick.

LIGHT WEIGHT . . . Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT . . . Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL . . . Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE . . . STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings available.

HIGH SALVAGE VALUE . . . The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

OUTLASTS THE LIFE OF THE CAR

That bright new refrigerator car coming out of the shop will someday wear out, be sold for scrap or be junked, but the STREAMLITE HAIRINSUL originally used in the car can be salvaged to be used again. It actually outlasts the life of the car!

STREAMLITE HAIRINSUL's high insulating efficiency remains the same year in and year out. Records show where all-hair insulation removed from refrigerator cars after 20 years or more of service, is in like new condition. All-hair insulation does not deteriorate with age. Its salvage value is high.

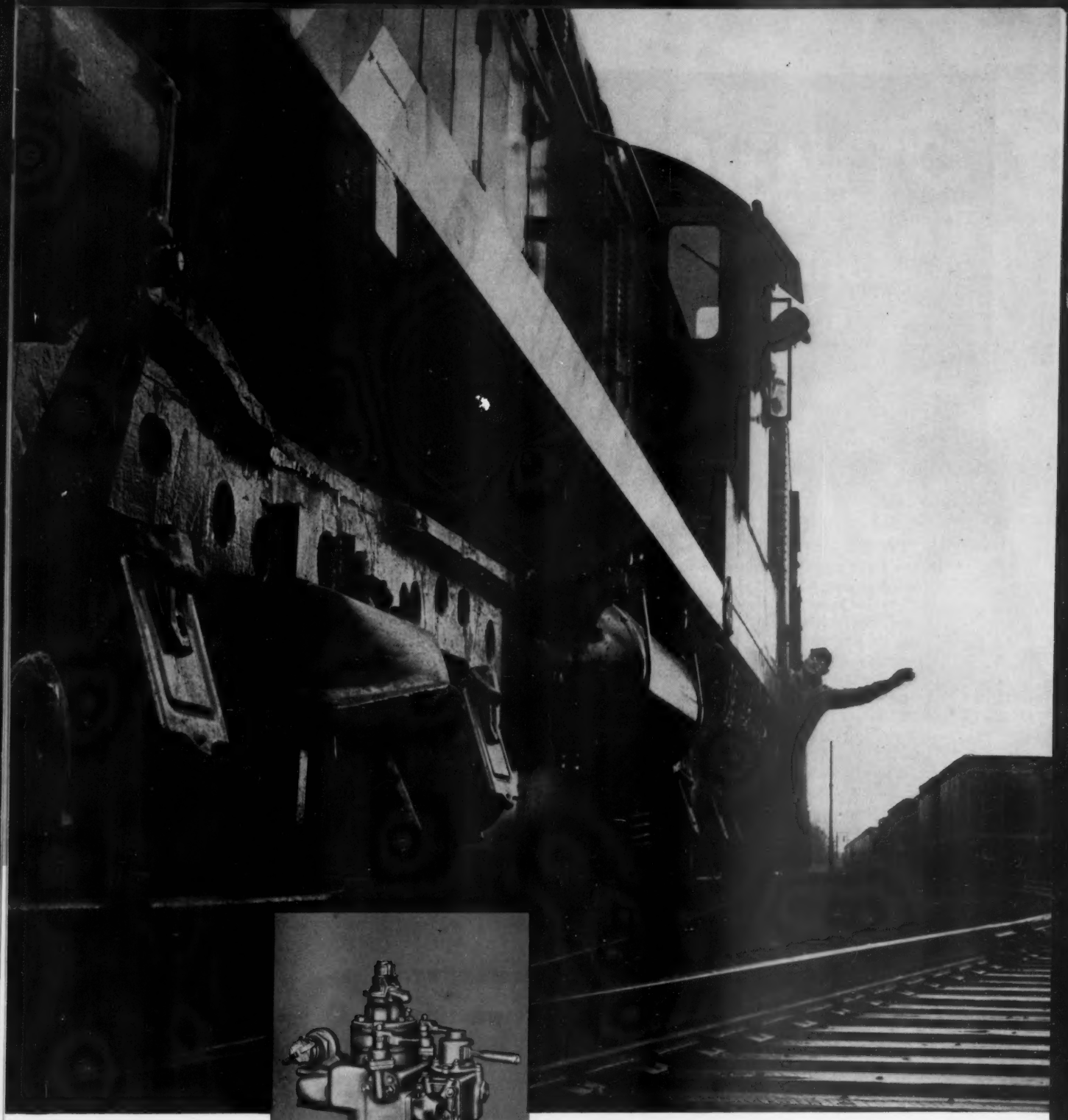
At left are additional reasons why STREAMLITE HAIRINSUL is the leading car insulation. Write for complete data.

MERCHANDISE MART, CHICAGO 54

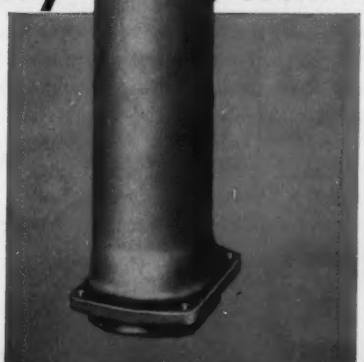
Streamlite HAIRINSUL

AMERICAN HAIR & FELT CO.

SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED



Set them off *easy* with the Westinghouse 6-SL Brake



The 6-SL Brake handles easily and responds quickly. With it, you can speed up your switching operations and still protect the lading.

Westinghouse Air Brake
COMPANY

AIR BRAKE DIVISION WILMERDING, PA.

FIFTY YEARS OF backed by guarantee from

AMCRECO
LOWRY PROCESS
CREOSOTED WOOD
Since 1904

First Half Century of Modern Wood Preservation made possible by invention of the Lowry Process

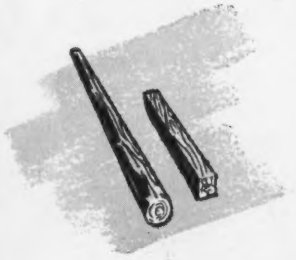
A little over fifty years ago in a plant at Shirley, Indiana, Mr. C. B. Lowry introduced his Empty Cell Creosoting Process to the world—an event that opened the door to the modern era of wood preservation and marked the beginning of success in man's age-old struggle to find a low cost wood preservative.

The Lowry Empty Cell Process opened the door to the modern era by making it possible to impregnate wood successfully with far less creosote and in far less time than was possible with the leading wood treatment process up to that time. The Lowry Process cut the cost of creosoting approximately in half and made it economical for the expanding railroad industry and other users of construction woods to take advantage of this service.

Lowry conceived the idea for his process about 1902, demonstrated it in an experimental plant for the Big Four Railroad at Riverside, Ohio in 1903, used it in commercial operations for the Big Four at the Shirley plant in 1904 and applied for a patent in 1905. The subsequent granting of patent rights, established Lowry as the father of the modern era of wood preservation.

PRACTICAL EXPERIENCE
continuous research and development
longer lasting wood products
American Creosoting Company

Out of the past . . . experience for the future!



● There is no substitute for experience. And the American Creosoting Company has over fifty years' experience in wood preservation. There is no substitute for pioneering spirit. And the spirit that led Mr. C. B. Lowry to invent his Empty Cell Process and found the American Creosoting Company is still very much alive.

For instance, the American Creosoting Company has carried on a continuous program of research and development throughout the years, both in its own laboratories and through research grants to leading universities. During this period, hundreds of chemical substances and processes have been developed and tested by Amcreco and other leading organizations in an effort to find new and better treating materials.

Despite these efforts and others, Science has apparently not yet been able to find a new material that equals creosote as a low cost chemical for prolonging the service life of poles, piles, timbers and other construction woods. *And longer service life is the first and most important reason why you invest money in treated woods. In general, any other feature that a preservative might offer is of secondary importance to its protective qualities.* One reason why creosote has been, and still is, the most effective preservative is the fact that it contains not just one but over one hundred toxic ingredients.

One other fact has become evident through years of research—there is still no laboratory short cut for determining the long range value of a preservative or process. The only real test is the test of how the preservative stands up on the job over a long period of time. Amcreco creosoted materials have undergone this test for over fifty years now, and their record is proven —long, long years of service with great strength throughout the life of the wood, and high resistance to fungi, borers, insects and all natural enemies of wood.

Of course, effective creosote treatment to a large extent depends on the method of application. There must be careful scientific control at every step in the pressure treating process. During application, the preservative must be measured by precise equipment, as it is forced into the wood. Final retention, distribution and concentration must be checked continually and accurately to assure the buyer the best possible product.

This is the type of treatment that assures clean, easy to handle construction woods that will last for years and years on the job. This is the type of treatment that takes the gamble out of purchasing. This is the type of treatment that you get from Amcreco.

Also in an industry where so much depends on service, Amcreco has had the time and experience to build up the facilities necessary to give you the kind of service you require. Our plants and sales offices are strategically located for prompt domestic or export shipment.

Write our nearest office for estimates or quotations on treated Timbers, Bridge Ties, Cross Ties, Piles, Poles, Cross Arms and Conduit. We would appreciate an opportunity to quote on your needs.

AMERICAN CREOSOTING COMPANY

Shreveport Creosoting Company
Colonial Creosoting Company
Federal Creosoting Company
Indiana Creosoting Company

AMCRECO
LOWRY PROCESS
CREOSOTED WOOD

Georgia Forest Products Company
Gulf States Creosoting Company
Georgia Creosoting Company
Kettle River Company

Announcing...Another Link in

NEW ALCO RENEWAL PARTS

Stock of over 5000 parts

Following through on an expansion program designed to ensure faster, more efficient service on orders for genuine Alco parts, Alco has opened another new parts warehouse similar in design to its new St. Louis warehouse announced last May.

It occupies over 29,000 sq ft and incorporates the latest facilities for warehousing and materials handling. To meet customer needs promptly, the warehouse carries over 5000 different mechanical and electrical parts to provide fast service to more than 45 railroads having over 1000 Alco locomotives in the area. The warehouse will enable Alco to maintain excellent service levels, thereby reducing customers' inventories and investment in spare parts.

When you are in Chicago, visit the new warehouse and judge for yourself how Alco is prepared to provide this superior service. Our new Chicago facilities can save you many thousands of dollars yearly with its wide variety and quantity of genuine Alco parts.

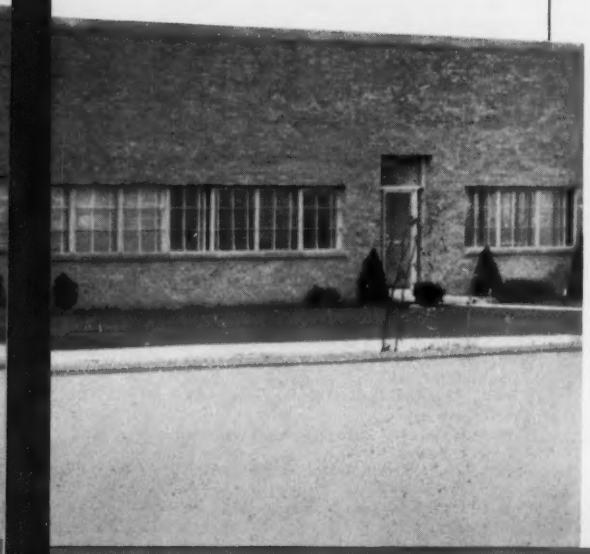
ADJUSTABLE RAMPS facilitate quick loading and unloading of heavy, bulky items. The new warehouse is also equipped with the latest in mobile dollies and "reach-type" fork trucks.

ALCO AMERICAN

Alco's Nationwide Supply System:

WAREHOUSE IN CHICAGO

lowers railroad inventory problems



IN AND OUT OF CHICAGO...

...It Pays to Specify Genuine Alco Renewal Parts

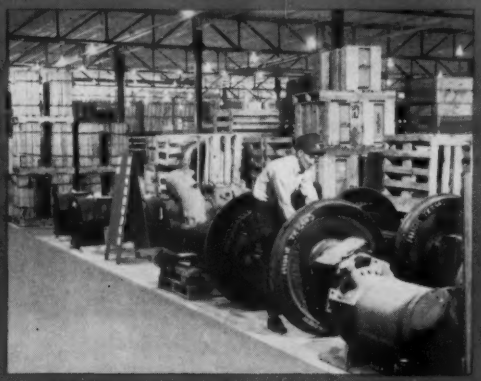
1. Latest design features. All genuine ALCO parts incorporate features and improvements developed through Alco's extensive laboratory and field research.

2. Full warranty and superior quality control. All new or repaired parts from Alco Warehouses carry a full warranty. Quality control ranges from microscopic analysis of metals to mechanical testing of giant forgings.

3. Scientific, uniform packaging. Alco parts are packaged to protect them from dirt, moisture and rough handling—as well as to provide convenience of storage.

4. Multiple supply—single responsibility. Advantages include fast delivery, low shipping and handling costs, single purchasing and accounting contact.

SPECIALLY DESIGNED RACKS AND BINS handle palletized stock and packaged small items. Regional management makes a complete review of inventory every three months to anticipate your needs.



EFFICIENT ORDER SERVICING is achieved on large parts through convenient 30 x 40 storage bays. The parts center is built of structural steel and measures 120 ft x 240 ft with 14-ft ceiling clearances.

ALCO ALL-PURPOSE LOCOMOTIVES lead way to higher railroad earnings through greater versatility and better utilization. The new ALCO DL-600—*the most versatile locomotive ever built*—hauls heavier tonnages at lower cost.

LOCOMOTIVE COMPANY

Sales and Service Offices in Principal Cities

a coast to coast AUTHORIZED Service Organization

FUEL INJECTION EQUIPMENT

ALASKA

Anchorage, Reeve Alaska Airmotive, 2424 E. 5th Ave.

ARIZONA

Phoenix, Charlie C. Jones Battery & Elec., 300-322 West Jefferson St.

CALIFORNIA

Bakersfield, Automotive Diesel & Electric Co., 1017—30th Street
Los Angeles 21, Magneto Sales & Service Co., 751 Towne Avenue
Sacramento, Langner & Rifkin, 1116—15th Street
San Diego 1, Electric & Diesel Service Co., 1254 Kettner Blvd.
San Francisco 3, Furrer & Uster, Inc., 225—7th Street
Wilmington, Diesel Control Corporation, 218 North Marine Ave.

COLORADO

Denver 3, Central Supply Co., 1171 Lincoln Street

FLORIDA

Jacksonville 1, Spencer Electric Co., Inc., 40 West Beaver Street
Miami 36, Florida Diesel Service Co., 1930 North Miami Ave.

GEORGIA

Atlanta 3, Auto Electric & Magneto Co., 477 Spring Street, N.W.

ILLINOIS

Chicago 16, Illinois Auto Electric Co., 2011-37 Indiana Avenue
Rock Island, Lohse Automotive Service, Inc., 430—17th Street

INDIANA

Indianapolis 4, Gulling Auto Electric, Inc., 450 North Capitol Ave.

IOWA

Cedar Rapids, Hogans Carburetor & Electric Co., 209 Seventh St., S.E.
Des Moines 9, Electric Service & Sales Co., 1313 Walnut Street

KENTUCKY

Louisville 4, Ellingsworth Auto Electric Co., 1003 East Broadway

LOUISIANA

New Orleans, Gerhardt's Fuel Injection Service, 2501 Jefferson Highway
New Orleans, John M. Walton, Inc., 1050 Carondelet St.
Bossier City, Vaughan Tractor & Auto Parts Co., 605 West Street
Mail Address: P.O. Box 661, Shreveport, La.

MARYLAND

Baltimore 1, Parks & Hull Automotive Corp., 1033 Cathedral St.

MASSACHUSETTS

Newton Upper Falls, W. J. Connell Co., 210 Needham Street, Newton Industrial Center

MICHIGAN

Detroit 2, Knorr-Maynard, Inc., 5743 Woodward Ave.

MINNESOTA

Minneapolis 6, Diesel Service Co., 2509 East Lake St.
Minneapolis 2, Reinhard Bros. Co., Inc., 11 South 9th Street

MISSOURI

Kansas City 8, Electrical & Magneto Service, Inc., 2538 Grand Avenue
St. Louis 23, Diesel Fuel Injection Service Co., 9331 South Broadway

NEBRASKA

Omaha 2, Carl A. Anderson, Inc., 16th & Jones Street

NEW JERSEY

Newark 2, Tire Trading Co., 239 Halsey Street

NEW YORK

Brooklyn 32, A & D Diesel Service, Inc., 145—21st Street
Brooklyn 16, E. A. Wildermuth, Inc., 1102 Atlantic Avenue
Buffalo 8, Hettrich Electric Service, 1032 Ellicott St.
Troy, Ehrlich Electric Service, Inc., 200 Fourth St.

NORTH CAROLINA

Raleigh, Diesel Injection Service, 200 Fourth Ave.

OHIO

Cleveland 14, Cleveland Ignition Co., 1301 Superior Ave., N.E.

OKLAHOMA

Tulsa 3, Magneto Ignition Co., 701 West Fifth St.

OREGON

Portland 14, Automotive Products, Inc., 1700 Southeast Grand Avenue

PENNSYLVANIA

Hazleton, Penn Diesel Service Co., No. Church at 27th St.
Philadelphia 32, J. W. Parkin, Jr., 2251 N. Broad Street
Pittsburgh 13, Automotive Ignition, 6358 Penn Avenue

TENNESSEE

Memphis 4, Automotive Electric Service Co., 982 Linden Avenue

TEXAS

Corpus Christi, Womack Bros., 2002 Leopard St.
Dallas, Beard & Stone Electric Company, 3909 Live Oak St.
El Paso, Reynolds Battery & Magneto, 801 Myrtle Avenue
Houston 1, Beard & Stone Electric Company, Milam at Polk St.
Houston 11, Magneto & Diesel Injector Service, 6931 Navigation Blvd.
Odessa, Electric Service & Supply, 1601 N. Grant St.
San Antonio 3, Womack Bros., 123 West Carolina

UTAH

Salt Lake City 2, Diesel Electric Service & Supply Co., 60 East 13th St., South

VIRGINIA

Norfolk, Diesel Injection Sales & Service, 808 Union Street
Richmond 20, Charles H. Woodward Electric Company, 709 Broad St.
Salem, Diesel Injection Sales & Service, 814—8th Street

WASHINGTON

Seattle 1, Seattle Injector Co., 2706 Second Ave.
Spokane 8, Sunset Electric Co., North 703 Division St.

WISCONSIN

Milwaukee 2, Wisconsin Magneto Co., 918 North Broadway

Canada

ALBERTA

Calgary, Hutton's Ltd., 131—11th Ave., West

BRITISH COLUMBIA

Vancouver, Magneto Sales & Service, Ltd., 126 Gore Ave.

NEW BRUNSWICK

Fredericton, Stairs Brothers, 493 Northumberland Street

NEWFOUNDLAND

St. John's, A. H. Murray & Co., Ltd.

QUEBEC

Montreal, International Electric Co., 1037 Bleury St.

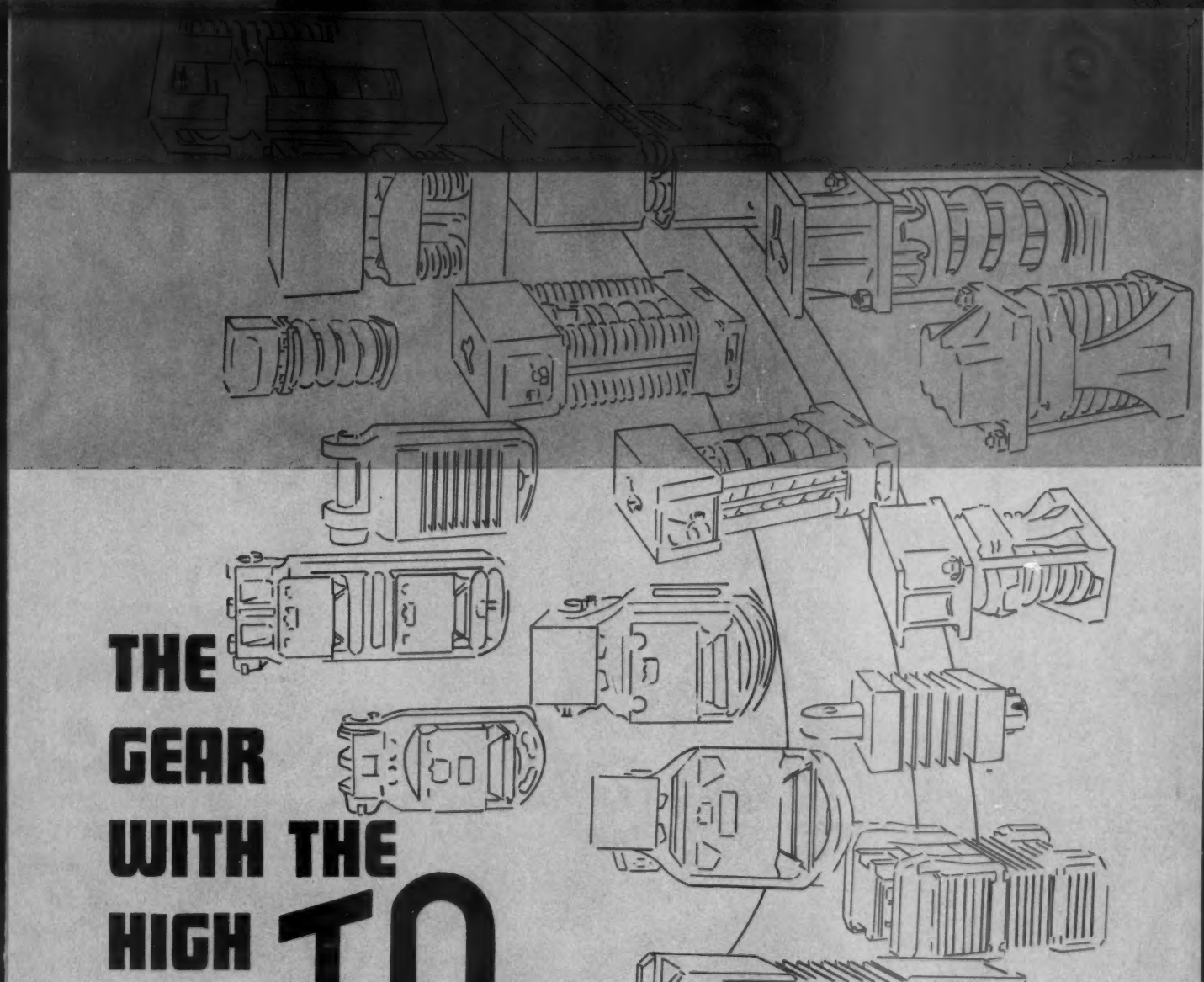
ONTARIO

Toronto, Diesel Equipment Ltd., 139 Laird Drive. Leaside

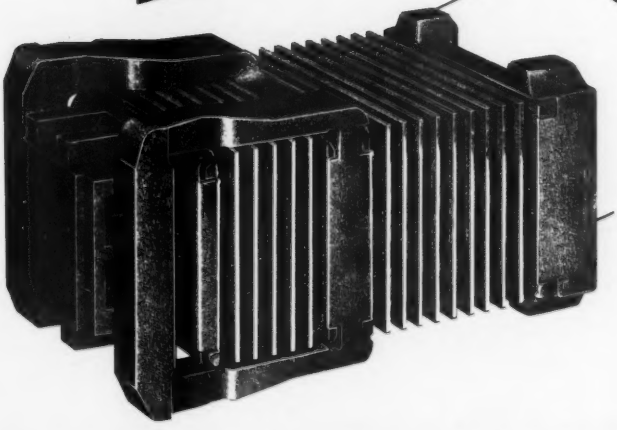
SCINTILLA DIVISION of
SIDNEY, NEW YORK

Export Sales: Bendix International Division • 205 East 42nd Street, New York 17, N. Y.

Bendix
AVIATION CORPORATION



THE GEAR WITH THE HIGH IQ



NATIONAL MF-275
RUBBER CUSHIONED DRAFT GEAR

From a proud family of draft gears which has served the American Railroads for 37 years

THE GEAR WITH THE HIGH IQ

National's MF-275 Rubber-Cushioned Draft Gear has recently undergone extensive impact testing in competition with standard friction gears. The results of these tests, conducted on the National Technical Center's modern Impact Test tracks, give unquestionable proof of the MF-275 gear's high IQ or "Impact Quantum" (work done in absorbing impact forces and stresses).

Explanation of "Impact Quantum", together with the fundamentals of car impact and the results of these tests, are contained in National's "Report No. 155", titled "IMPACT". This report may be had by contacting any one of National's sales offices or by writing to the General Office.

In addition, a brief but detailed lecture on the subject "Impact", illustrated with slides, will be given anytime, anywhere upon request — one more service offered to our friends, the American Railroads.

On the following pages are charts from "Report No. 155" giving a few of the more salient features of the National MF-275 Rubber-Cushioned Draft Gear — a gear that fits any standard pocket and yoke, with no interference to train lines and which offers:

LOWER CENTER SILL FORCES
LOWER COUPLER FORCE
LOWER BODY MEMBER STRESS
LOWER ACCELERATION
LOWER "LAG FACTOR"

DRAW GEAR SPECIALISTS

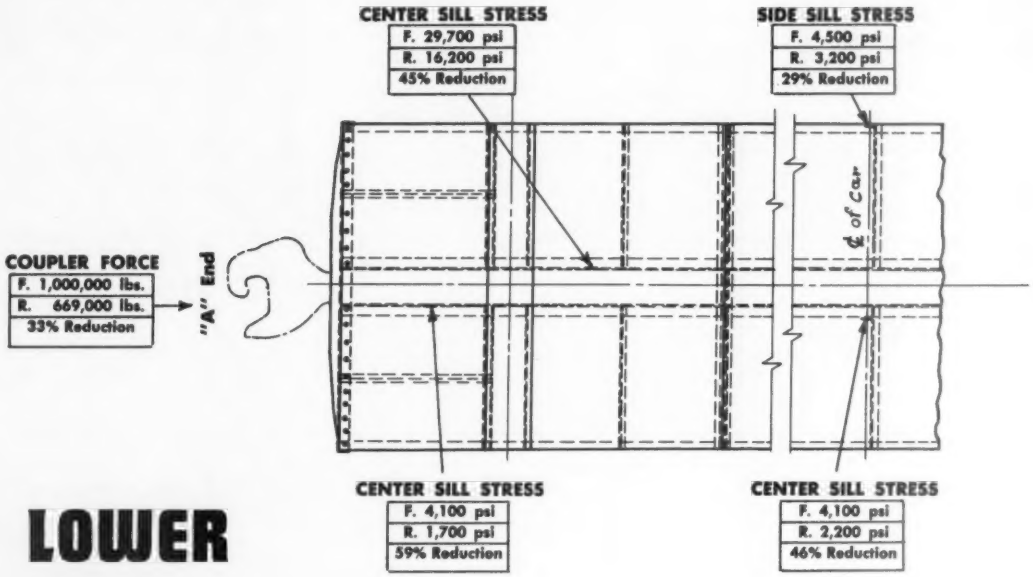
Since 1918 almost 900,000 National friction draft gears of various types have given the American Railroads approximately 151,200,000,000 miles of faithful service.

Since 1937 over 40,000 National Rubber-Cushioned Draft Gears, applied to Diesel Locomotives, have given approximately 200,000,000,000 miles of service.

Since 1893 National has been one of the leaders in the development and manufacture of automatic couplers.

On this basis National feels qualified to assume the title of "Draw Gear Specialist."

Not wishing to live on accomplishments of the past, nor on successes of the present, National is constantly working, through its Technical Center, to provide even better draft gears and couplers for the future . . . draw gear assemblies that will give even better impact protection to all rolling stock — and to its passengers and lading.



LOWER BODY MEMBER STRESSES

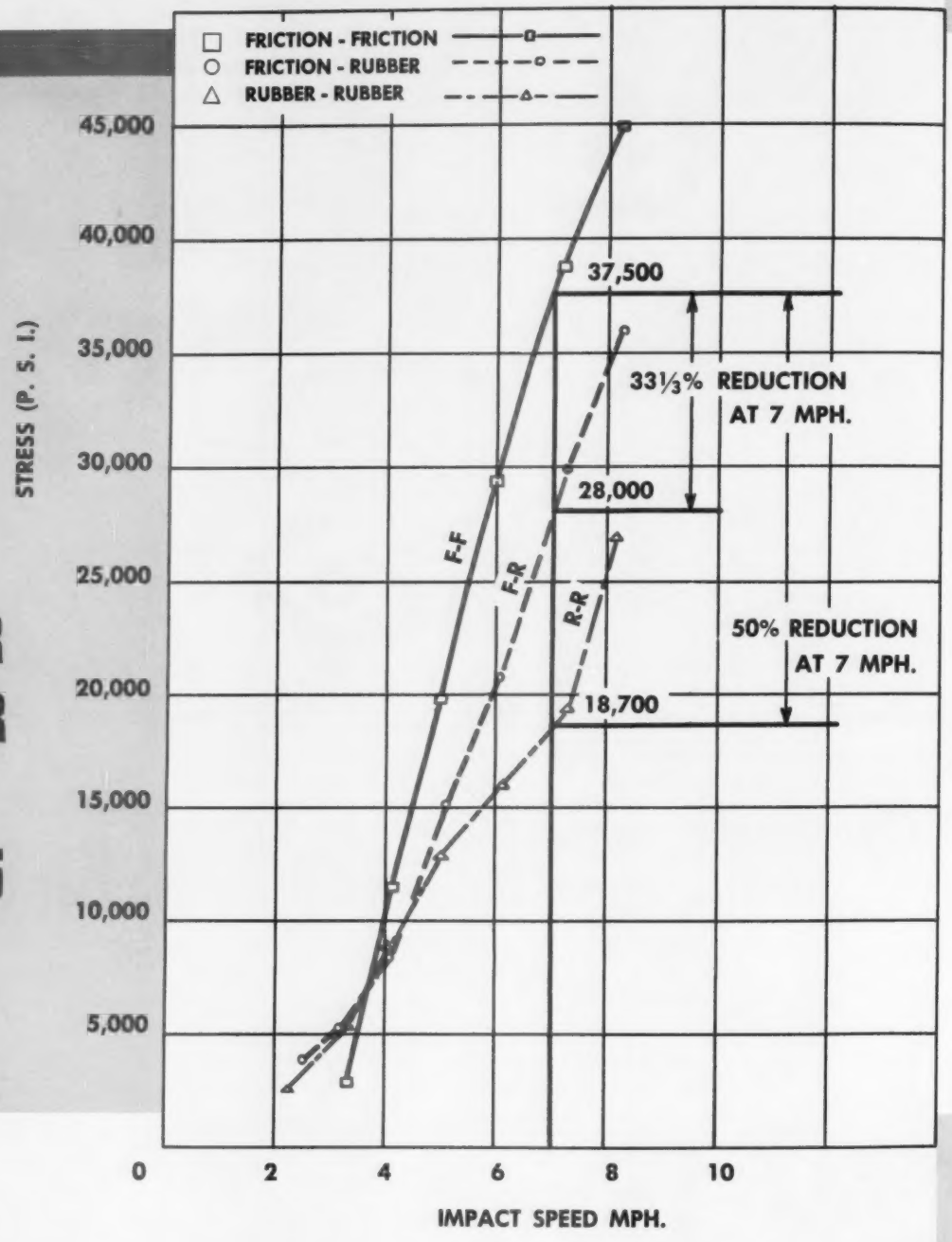
Management wants lower maintenance costs; traffic men want fewer bad-order cars, fewer car shortages.

Reduction of forces and stresses, in addition to greater lading protection, can mean lower maintenance costs, can reduce the number of bad-order cars and can make more cars available for shipments.

The above chart shows how stresses are reduced in car body members, bringing the stresses back into the safe capacity for which the body member was designed. Why continue to expend labor and material in "beefing-up" body members when the trouble can be corrected at its source?

Use National MF-275 Rubber-Cushioned Draft Gears for lower body member stresses!

LOWER CENTER SILL STRESS

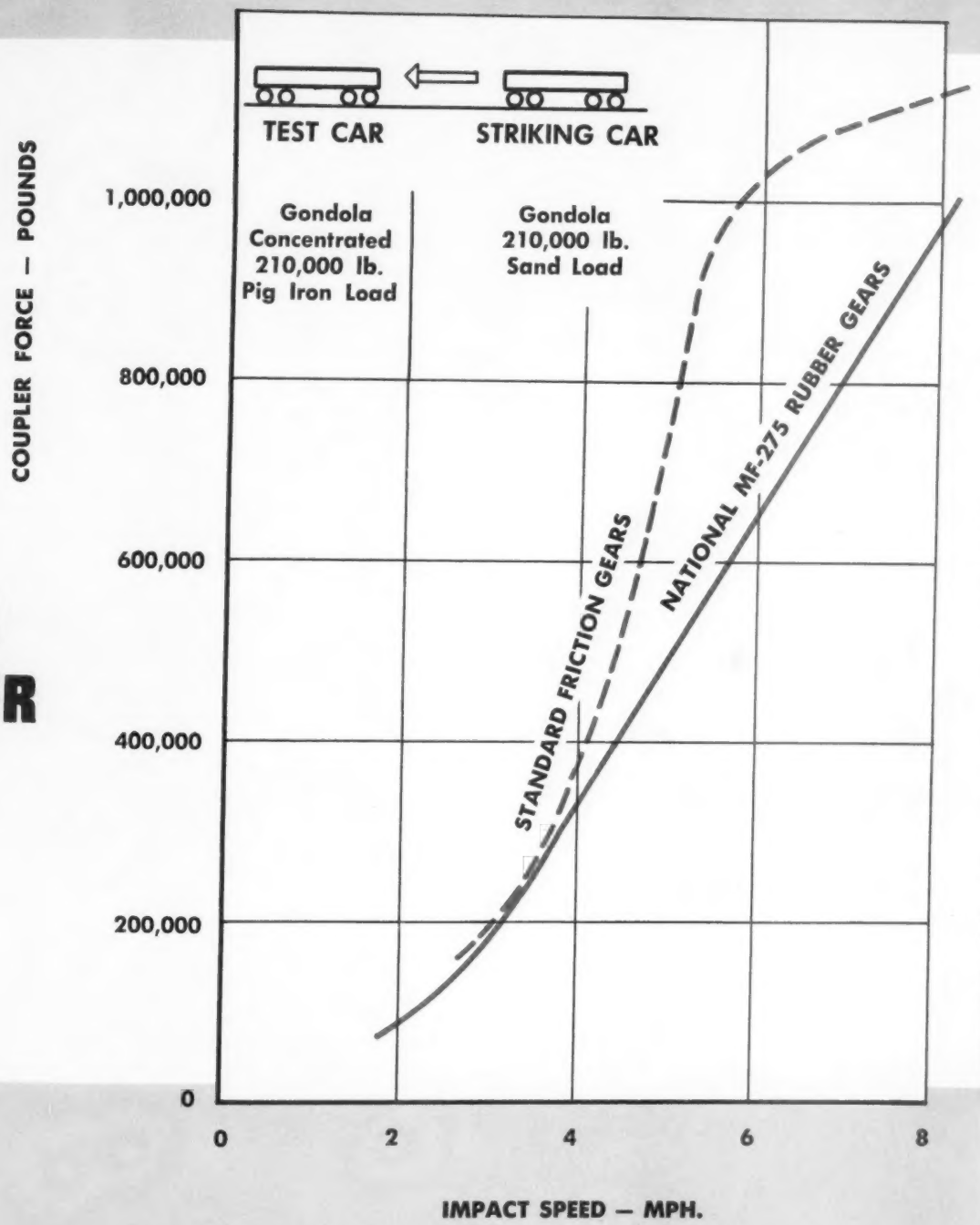


Buckling center sills plague all railroad men today. Mechanical men try to strengthen them; management wants to cut down expenses; traffic men want to keep cars running. Why not face the matter squarely?

Seven miles per hour is the accepted average switching speed today. Often it is greater. The chart above clearly indicates that at seven miles per hour the center sill stress with two National rubber gears is 50 per cent **lower** than with two standard friction gears; and with a combination of one friction and one rubber gear is 33-1/3 per cent **lower.**

Use National MF-275 Rubber-Cushioned Draft Gears for **lower** center sill stress!

LOWER COUPLER FORCE



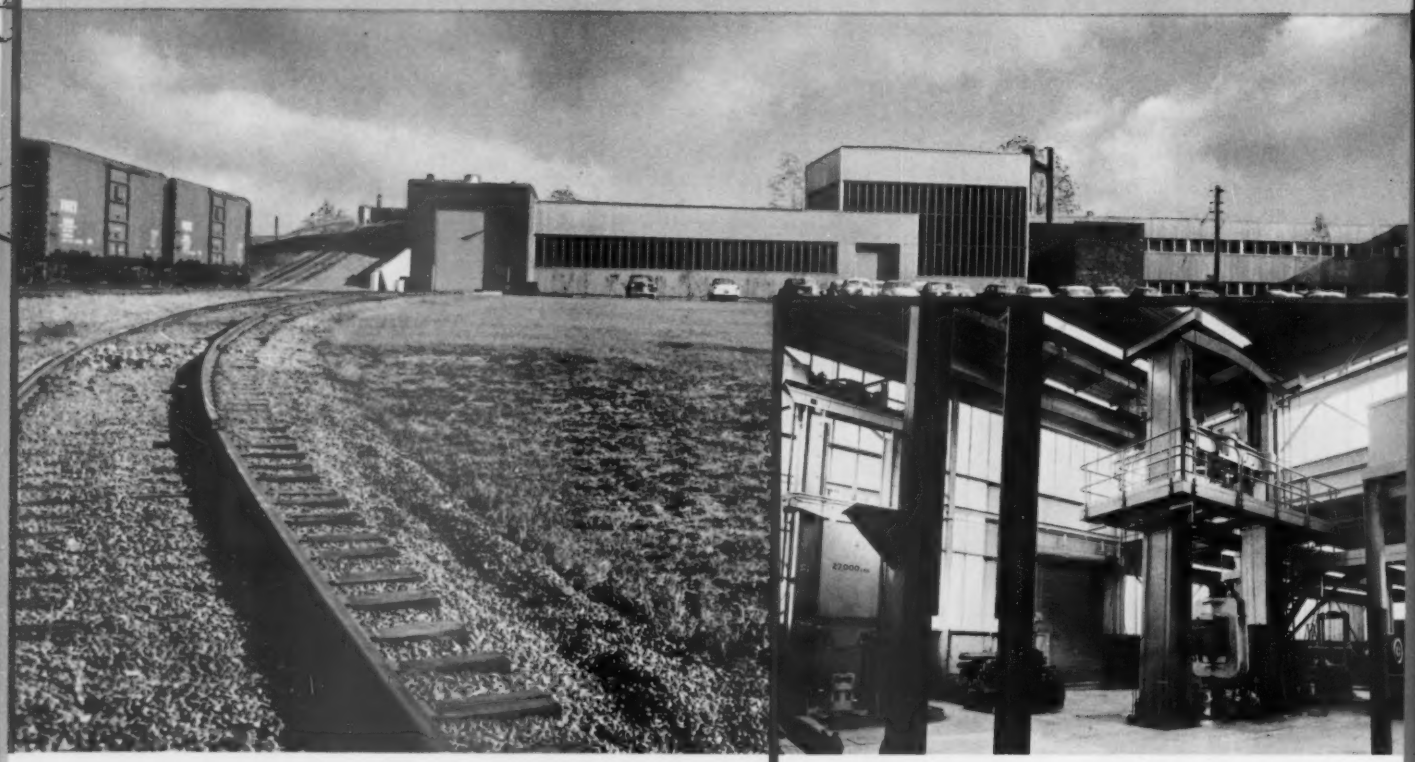
Few items used in 1932 train operations are used today. Trains are longer . . . heavier . . . run faster; locomotives are more powerful . . . have higher tractive effort . . . better braking; cars are bigger . . . heavier . . . carry more lading; switching speeds are higher . . . impact forces greater.

Yet, friction draft gears are in use today as in 1932.

Examine the chart above and see how coupler force is reduced up to 33 per cent with rubber draft gears.

Use National MF-275 Rubber-Cushioned Draft Gears for lower coupler force!

"PROGRESS THROUGH RESEARCH"



TECHNICAL CENTER CLEVELAND

Dedicated to serve the Railroads of America

SALES OFFICES

CHICAGO
224 S. Michigan Ave.
Chicago 4, Ill.

CLEVELAND
10600 Quincy Ave.
Cleveland 6, Ohio

NEW YORK
60 East 42nd St.
New York 17, N. Y.

PHILADELPHIA
1617 Pennsylvania Blvd.
Philadelphia 3, Pa.

RICHMOND
219 E. Broad St.
Richmond 19, Va.

SAN FRANCISCO
681 Market St.
San Francisco 5, Calif.

ST. LOUIS
411 North 7th St.
St. Louis 1, Mo.

NATIONAL
MALLEABLE AND STEEL
CASTINGS COMPANY
CLEVELAND 6, OHIO

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF DECEMBER AND TWELVE MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Akron, Canton & Youngstown	Dec.	171	$443	....	$451	$422	$66	$71	$ 8	$58	$55	$14	$41	$139	$343	$349	76.0	82.8	$108	Cr. $44	$127	$42
	12 mos.	171	4,994	....	5,093	6,292	798	858	72	747	654	177	457	1,613	4,061	4,155	79.7	66.0	1,032	358	453	869
Atchison, Topeka & Santa Fe	Dec.	13,076	38,721	$3,644	48,184	49,247	7,255	9,764	1,086	8,721	11,511	1,943	1,268	16,220	35,718	42,798	74.1	86.9	12,466	3,746	7,883	4,858
	12 mos.	13,073	437,978	43,172	532,292	613,531	81,364	96,592	8,492	100,831	115,086	23,076	14,430	176,911	399,502	441,362	75.1	71.9	132,791	65,821	63,990	75,109
Atlanta & St. Andrews Bay	Dec.	82	276	1	285	268	26	34	3	46	41	5	6	62	159	176	56.0	65.6	125	32	64	22
	12 mos.	82	3,672	13	3,759	3,748	303	373	33	334	282	58	73	820	1,752	1,764	46.6	47.1	2,007	860	741	570
Atlanta & West Point	Dec.	93	239	40	356	398	52	62	11	59	45	13	16	163	311	307	87.5	77.0	45	18	8	34
	12 mos.	93	2,860	412	3,892	4,508	534	692	79	659	765	149	180	1,674	3,303	3,749	84.9	83.2	589	241	153	256
Western of Alabama	Dec.	133	300	38	396	403	57	47	15	69	65	18	18	137	300	294	75.8	72.9	96	Cr 15	113	63
	12 mos.	133	3,464	393	4,319	4,806	623	639	101	763	804	207	205	1,572	3,411	3,642	79.0	75.8	908	345	574	558
Atlantic & Danville	Dec.	205	128	....	130	137	32	37	2	13	17	5	10	53	118	130	88.3	94.5	12	10	—22	—26
	12 mos.	205	1,561	....	1,584	1,885	357	425	23	156	171	57	132	549	1,315	1,480	82.9	78.5	269	108	—139	—6
Atlantic Coast Line	Dec.	5,344	10,103	1,570	13,228	14,188	1,888	2,233	305	2,957	2,810	604	398	5,058	10,996	11,365	83.1	80.1	2,233	1,175	935	1,643
	12 mos.	5,356	121,001	17,434	152,013	164,579	25,174	28,914	2,311	33,008	40,016	7,097	4,644	57,158	127,239	141,646	83.7	86.1	24,774	10,625	10,964	10,296
Charleston & Western Carolina	Dec.	343	528	1	542	546	120	152	7	98	107	43	20	146	400	455	73.8	83.2	142	Cr 35	179	124
	12 mos.	343	6,435	16	6,604	6,939	1,812	1,880	95	1,222	1,220	510	219	1,932	5,357	5,497	81.1	79.2	1,247	365	836	915
Baltimore & Ohio	Dec.	6,184	26,272	1,710	30,449	33,100	3,727	4,504	732	6,527	7,201	1,015	859	13,599	26,640	28,670	87.5	86.6	3,809	2,172	384	613
	12 mos.	6,183	330,852	19,369	378,089	460,849	45,436	60,628	5,968	76,176	97,070	12,264	10,296	160,501	311,503	366,066	82.4	79.4	66,586	22,274	29,488	43,798
Staten Island Rapid Transit	Dec.	29	181	55	239	263	51	45	14	29	28	2	2	148	265	256	110.5	97.1	—25	39	—86	—49
	12 mos.	29	2,212	617	2,860	3,437	580	663	155	318	343	23	19	1,603	2,902	3,096	101.5	90.1	—42	467	—749	—376
Bangor & Aroostook	Dec.	602	830	39	911	1,124	84	127	23	241	320	90	24	302	717	875	78.7	77.9	194	Cr 24	278	390
	12 mos.	602	11,363	364	12,239	12,972	2,834	2,823	202	2,732	2,926	1,014	238	3,504	10,090	10,233	82.4	78.9	2,148	868	2,269	2,243
Bessemer & Lake Erie	Dec.	209	898	1	927	1,001	2,223	236	2,059	524	902	142	30	333	3,265	1,812	352.0	181.1	—2,337	Cr1,670	—412	1,158
	12 mos.	209	20,263	5	20,456	30,107	4,259	2,645	2,280	6,591	8,630	1,709	318	4,762	17,169	18,391	83.9	61.1	3,287	1,384	4,487	7,378
Boston & Maine	Dec.	1,576	5,192	903	6,887	7,156	1,244	1,255	168	1,115	1,049	195	122	3,179	5,991	6,036	87.0	84.4	896	Cr2,539	2,978	775
	12 mos.	1,664	61,207	10,589	81,233	88,871	15,010	15,504	1,952	12,030	13,337	2,176	1,430	36,917	69,298	71,599	85.3	80.6	11,935	3,031	3,244	5,382
Cambria & Indiana	Dec.	35	160	....	160	150	16	41	1	107	95	22	....	23	160	169	99.8	112.4	....	74	97	144
	12 mos.	35	1,486	....	1,487	1,678	226	242	10	1,239	1,095	267	1	252	1,811	1,673	121.8	99.7	—325	660	834	1,014
Canadian Pacific Lines in Maine	Dec.	234	406	35	477	517	78	184	6	116	105	17	6	264	481	541	100.9	104.7	—4	32	—69	—88
	12 mos.	234	4,892	593	5,859	6,605	1,127	1,361	65	1,195	1,523	209	95	2,519	5,118	5,830	87.4	88.3	741	340	102	67
Canadian Pacific Lines in Vermont	Dec.	90	182	12	211	230	42	41	38	52	22	....	5	123	231	197	109.4	85.7	—20	12	—95	—48
	12 mos.	90	2,206	176	2,637	2,743	555	1,005	88	374	437	2	81	1,446	2,564	3,112	97.2	113.4	73	156	—809	—1,245
Central of Georgia	Dec.	1,764	3,040	158	3,552	3,244	533	521	17	631	516	143	162	1,296	2,812	2,747	79.2	84.7	740	Cr 104	783	449
	12 mos.	1,770	35,007	1,841	40,021	42,916	6,252	6,938	511	6,615	6,835	1,649	1,766	15,526	32,576	34,525	81.4	80.5	7,445	2,279	4,620	4,265
Central of New Jersey	Dec.	613	4,152	407	4,967	4,842	931	1,067	542	811	941	180	74	2,040	4,048	4,385	81.5	90.6	919	347	319	—14
	12 mos.	613	46,392	5,354	56,052	62,348	7,954	8,929	1,603	9,653	12,139	2,126	902	23,929	44,793	50,245	79.9	80.6	11,259	5,451	3,747	4,890
Central Vermont	Dec.	422	807	48	948	1,043	146	106	16	72	132	11	18	370	649	701	68.5	67.2	299	42	85	189
	12 mos.	422	9,203	711	10,756	11,688	2,457	2,365	198	1,225	1,506	135	203	4,379	8,771	9,086	81.5	77.7	1,985	512	238	984
Chesapeake & Ohio	Dec.	5,128	24,631	679	26,626	24,180	2,950	5,703	696	4,709	5,951	1,500	722	8,949	18,746	23,227	70.4	96.1	7,880	1,768	6,518	4,713
	12 mos.	5,110	280,978	7,430	304,518	344,049	41,342	48,770	4,951	56,942	66,555	18,087	8,172	103,541	225,487	248,498	74.0	72.2	79,031	30,770	52,352	59,916
Chicago & Eastern Illinois	Dec.	868	2,355	291	2,971	2,964	458	517	29	503	424	131	200	1,221	2,581	2,482	86.9	83.7	390	Cr 326	580	338
	12 mos.	868	26,567	2,787	32,615	36,484	4,296	4,910	342	5,436	6,139	1,570	1,653	12,940	26,485	27,954	81.2	76.6	6,130	1,196	3,657	4,300
Chicago & Illinois Midland	Dec.	130	745	....	761	929	91	22	15	134	192	23	32	250	566	529	74.3	57.0	195	86	77	198
	12 mos.	130	7,574	....	7,751	9,051	857	933	118	1,648	1,919	279	383	2,447	5,898	6,431	76.1	71.1	1,852	899	544	969
Chicago & North Western	Dec.	7,873	11,430	1,889	15,471	15,634	2,217	2,651	327	2,917	2,220	834	381	7,375	13,773	13,176	89.0	84.3	1,697	943	175	1,712
	12 mos.	7,876	145,765	22,053	188,440	204,344	29,512	34,114	4,134	34,816	36,414	9,959	4,602	87,683	166,982	175,528	88.6	85.9	21,458	12,704	653	8,956
Chicago, Burlington & Quincy	Dec.	8,858	17,151	1,764	21,296	21,631	2,912	5,003	671	4,370	3,602	834	608	8,239	17,006	18,645	79.9	86.2	4,289	809	2,435	1,371
	12 mos.	8,860	206,301	18,917	252,353	278,414	35,419	49,072	5,043	43,181	40,018	9,714	6,099	95,610	190,334	203,124	75.4	73.0	62,019	28,989	27,749	29,880
Chicago Great Western	Dec.	1,470	2,406	9	2,627	2,935	457	753	52	431	455	116	131	1,116	2,186	2,218	83.2	75.6	441	Cr 120	319	317
	12 mos.	1,470	30,437	117	32,658	31,436	5,002	5,385	515	4,859	4,068	1,441	1,342	10,566	22,665	21,270	69.4	67.7	9,992	3,400	4,073	4,055
Chicago, Indianapolis & Louisville	Dec.	541	1,482	73	1,742	1,705	234	246	22	254	226	73	98	625	1,322	1,305	75.9	76.6	420	176	187	160
	12 mos.	541	18,392	719	20,792	21,888	2,998	3,991	274	3,124	3,223	858	1,086	7,526	15,955	16,947	76.7	77.4	4,837	1,739	1,956	1,985
Chicago, Milw., St. Paul & Pacific	Dec.	10,641	16,631	1,386	20,340	20,359	2,891	3,538	699	3,533	3,953	340	527	8,145	16,145	17,698	79.4	86.9	4,195	265	3,444	1,892
	12 mos.	10,640	197,505	14,917	237,745	259,860	38,684	42,741	5,114	46,884	53,745	10,143	5,828	95,735	199,411	218,184	83.9	84.0	38,334	15,329	14,569	14,664
Chicago, Rock Island & Pacific	Dec.	7,924	12,143	1,716	15,548	15,799	1,739	1,581	253	2,200	2,648	570	501	5,864	11,146	11,465	71.7	72.6	4,402	120	3,657	2,620
	12 mos.	7,895	151,963	17,468	187,063	207,955	25,838	27,162	3,036	30,420	32,562	6,712	5,771	69,706	141,605	147,337	75.7	70.9	45,458	15,419	20,754	28,259
Chicago, St. Paul, Minn., & Omaha	Dec.	1,616	2,663	162	3,072	2,935	477	497	54	486	385	87	72	1,353	2,521	2,482	82.1	84.6	550	174	94	48
	12 mos.	1,616	28,524	1,870	33,017	34,334	5,280	5,856	594	4,810	5,111	1,086	786	15,747	28,189	29,982	85.4	87.3	4,828	2,074	—535	—601
Clinchfield	Dec.	304	1,900	....	1,905	1,813	247	301	26	268	321	91	52	422	1,037	1,102	54.4	60.8	869	139	809	—256
	12 mos.	314	20,763	4	20,875	24,279	3,272	4,439	241	3,521	4,137	1,365	574	4,777	12,666	14,668	60.7	60.4	8,209	2,203	6,866	7,595

(Continued on next page)

To File Tear Here

REVENUES AND EXPENSES OF RAILWAYS

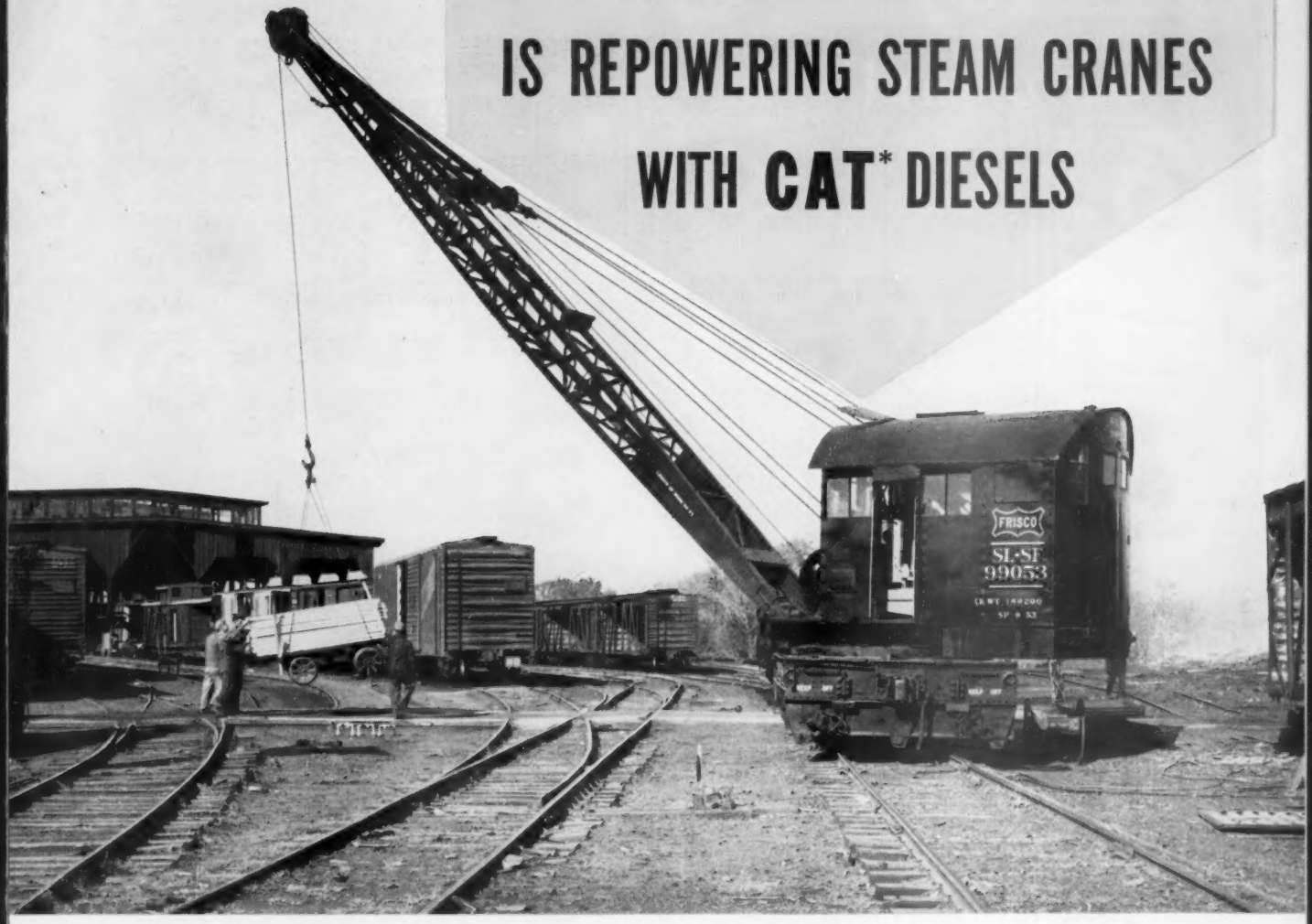
(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF DECEMBER AND TWELVE MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Colorado & Southern	Dec.	724	1,086	59	1,310	1,409	266	278	60	162	258	41	35	474	1,005	1,101	76.7	78.2	305	149	86	26
	12 mos.	727	12,011	832	14,424	16,279	2,285	2,336	322	2,622	2,225	497	375	5,380	11,403	11,108	79.1	68.2	3,021	1,381	1,255	2,124
Ft. Worth & Denver	Dec.	1,038	1,777	139	2,096	2,192	305	456	39	260	294	44	67	747	1,492	1,570	71.2	71.6	604	94	338	364
	12 mos.	1,038	20,078	1,630	23,701	22,973	4,394	3,889	442	3,289	3,238	522	714	7,794	17,431	16,622	73.5	72.4	6,270	1,632	2,870	2,881
Colorado & Wyoming	Dec.	40	186	....	286	257	24	19	2	23	42	11	1	104	165	176	57.6	68.7	121	64	56	41
	12 mos.	40	1,695	....	2,813	3,426	236	214	24	330	427	136	17	1,102	1,827	2,041	64.9	59.5	986	520	447	557
Columbus & Greenville	Dec.	168	133	....	131	151	27	38	4	25	43	6	7	46	133	160	101.3	106.1	—2	9	—8	—10
	12 mos.	168	1,764	1	1,844	2,087	422	433	44	304	367	75	58	577	1,592	1,719	86.4	82.4	252	216	34	120
Delaware & Hudson	Dec.	792	4,008	159	4,320	4,404	852	782	360	817	906	167	86	1,603	3,578	3,644	82.8	82.7	742	335	424	1,135
	12 mos.	793	45,396	1,895	49,083	55,257	7,978	9,195	1,506	9,462	9,814	2,146	1,043	18,382	39,352	41,834	80.2	75.7	9,730	3,496	5,748	10,420
Delaware, Lackawanna & Western	Dec.	962	5,383	861	6,984	6,874	765	652	202	931	1,251	307	185	3,430	5,597	5,641	80.1	82.1	1,388	67	1,137	809
	12 mos.	962	61,419	9,316	78,615	89,650	9,514	10,590	1,756	12,686	15,259	3,792	2,156	37,308	65,032	69,533	82.7	77.6	13,582	5,398	7,072	10,188
Denver & Rio Grande Western	Dec.	2,165	5,645	206	6,071	6,055	596	631	135	938	988	286	227	1,887	3,930	4,013	64.7	66.3	2,141	910	1,234	1,070
	12 mos.	2,165	67,626	2,801	73,139	84,701	9,177	10,640	1,398	11,474	13,541	3,418	2,291	22,040	48,409	54,940	66.2	64.9	24,730	10,733	14,070	13,096
Detroit & Mackinac	Dec.	232	167	....	170	155	38	49	3	40	29	9	4	49	148	139	87.0	89.4	22	Cr 4	29	32
	12 mos.	232	1,966	2	2,004	2,131	468	513	35	320	293	113	58	463	1,458	1,446	72.8	67.9	546	304	280	348
Detroit & Toledo Shore Line	Dec.	50	679	....	729	710	—4	122	4	70	77	18	17	212	309	478	42.3	67.4	420	86	190	14
	12 mos.	50	6,963	....	7,522	8,608	871	1,048	41	717	782	215	203	2,286	4,246	4,761	56.5	55.3	3,275	976	958	1,067
Detroit, Toledo & Ironton	Dec.	464	1,659	....	1,731	1,710	147	252	32	259	276	93	46	397	919	907	53.1	53.1	811	Cr 297	1,128	415
	12 mos.	464	17,025	2	17,705	22,468	2,964	3,019	290	3,077	3,179	1,158	462	5,911	13,230	15,323	74.7	68.2	4,475	587	4,136	3,207
Duluth, Missabe & Iron Range	Dec.	569	515	1	578	659	446	634	67	567	963	110	10	531	1,958	2,764	338.7	419.3	—1,380	Cr 939	—452	4,778
	12 mos.	567	33,093	11	39,075	63,214	6,015	7,216	798	7,963	9,004	1,327	118	12,819	28,579	36,750	73.1	58.1	10,496	5,210	5,061	14,539
Duluth, South Shore & Atlantic	Dec.	553	486	5	519	554	118	108	15	118	140	23	32	221	508	518	98.1	93.5	10	27	—19	—3
	12 mos.	553	6,357	57	6,799	8,149	1,568	1,981	128	1,468	1,771	278	332	2,414	6,048	7,025	89.0	86.2	751	341	302	442
Duluth, Winnipeg & Pacific	Dec.	175	488	1	497	400	70	35	5	62	72	2	6	210	358	326	71.9	81.3	140	39	34	—7
	12 mos.	175	5,494	10	5,592	5,013	912	1,004	52	838	932	26	66	2,492	4,401	4,422	78.7	88.2	1,191	436	—87	—487
Elgin, Joliet & Eastern	Dec.	236	3,044	....	3,760	4,193	301	484	37	295	4,812	65	36	1,351	2,250	7,658	59.8	182.6	1,510	706	688	61
	12 mos.	236	34,708	....	43,232	55,322	2,899	4,178	317	13,534	17,114	1,320	419	16,349	35,193	43,703	81.4	79.0	8,039	3,582	2,078	3,453
Erie	Dec.	2,224	10,471	642	12,155	13,303	1,302	2,276	201	2,126	2,315	511	338	5,771	10,150	11,773	83.5	88.5	2,005	227	1,035	1,070
	12 mos.	2,224	132,854	6,865	152,087	181,505	20,888	25,841	2,875	25,052	26,190	6,103	4,246	66,556	124,262	136,383	81.7	75.1	27,825	7,268	12,686	18,986
Florida East Coast	Dec.	571	2,197	482	3,133	3,027	392	350	42	763	530	89	83	1,194	2,593	2,326	82.8	76.9	540	201	104	325
	12 mos.	571	23,118	5,801	31,682	32,898	5,189	4,521	525	6,289	6,393	946	948	12,454	26,889	26,119	84.9	79.4	4,793	2,284	228	2,741
Georgia Railroad	Dec.	321	601	24	717	757	112	117	10	121	131	34	36	317	620	646	86.4	85.3	98	40	85	102
	12 mos.	321	7,252	289	8,449	9,623	1,451	1,463	127	1,549	1,625	395	403	3,601	7,414	7,808	87.8	81.1	1,035	437	1,007	1,714
Georgia & Florida	Dec.	332	248	....	251	271	83	71	3	36	36	9	20	103	260	228	103.4	84.3	—8	11	—38	—6
	12 mos.	334	3,288	....	3,328	3,886	1,069	1,199	125	431	446	93	229	1,067	2,996	3,214	90.0	82.7	332	173	—111	104
Grand Trunk Western	Dec.	952	4,089	194	4,743	4,834	579	347	59	772	597	106	85	2,316	3,940	3,444	83.1	71.3	803	311	309	635
	12 mos.	952	49,581	2,615	56,339	61,239	8,223	8,272	663	9,907	10,104	1,096	949	26,117	47,462	48,432	84.2	79.1	8,876	3,789	658	4,822
Can. Natl. Lines in New England	Dec.	172	156	5	202	258	64	65	11	25	28	....	2	139	251	245	124.3	94.8	—49	15	—126	—73
	12 mos.	172	1,900	85	2,399	2,667	868	832	124	359	487	1	33	1,710	3,142	3,245	131.0	121.7	—744	289	—1,755	—1,515
Great Northern	Dec.	8,300	16,970	1,055	19,736	19,248	2,918	4,234	336	3,487	3,951	718	422	6,865	14,643	16,373	74.2	85.1	5,093	2,337	2,348	292
	12 mos.	8,306	220,762	10,975	250,254	268,035	46,723	47,743	4,588	42,716	45,687	8,477	4,925	83,471	188,621	194,884	75.4	72.7	61,633	30,437	24,226	27,531
Green Bay & Western	Dec.	224	344	....	352	384	43	67	4	33	29	8	22	102	218	254	62.0	66.2	133	57	57	19
	12 mos.	224	4,257	....	4,338	4,680	1,072	996	49	556	490	95	273	1,268	3,380	3,117	77.9	66.6	959	451	218	468
Gulf, Mobile & Ohio	Dec.	2,758	5,979	401	6,890	7,714	1,212	1,739	75	1,085	1,653	282	270	2,094	5,131	6,441	74.5	83.5	1,759	642	796	426
	12 mos.	2,761	71,400	4,077	81,179	93,633	12,465	14,851	901	15,205	17,071	3,360	3,291	25,066	60,373	66,433	74.4	71.0	20,806	8,145	8,922	10,691
Illinois Central	Dec.	6,539	18,749	1,642	22,354	24,778	3,044	3,058	444	3,466	5,266	749	587	8,821	16,901	19,101	75.6	77.1	5,453	1,634	3,495	1,920
	12 mos.	6,537	227,864	21,180	275,959	308,374	42,640	45,236	4,816	45,903	50,647	8,662	6,376	101,777	209,010	221,014	75.7	71.7	66,950	32,622	28,258	32,940
Illinois Terminal	Dec.	355	768	55	924	952	239	123	130	186	174	42	45	450	1,001	821	108.3	86.2	—77	Cr 240	128	94
	12 mos.	355	9,186	643	10,984	12,594	1,737	1,790	419	1,826	2,175	501	543	4,598	9,464	9,958	86.1	79.1	1,520	451	765	1,265
Kansas City Southern	Dec.	891	2,743	136	3,221	3,676	647	695	117	369	661	92	105	1,030	2,321	2,656	72.1	72.3	899	Cr 504	1,198	907
	12 mos.	891	35,460	1,345	40,810	47,861	4,424	6,708	548	4,574	6,699	1,091	1,112	12,486	24,122	29,963	59.1	62.6	16,688	6,358	8,112	8,404
Kansas, Oklahoma & Gulf	Dec.	327	361	....	362	399	57	120	7	27	33	11	38	121	271	379	74.8	94.8	91	22	41	361
	12 mos.	327	4,924	4	4,946	6,558	768	1,182	88	397	508	136	345	1,355	3,128	3,814	63.2	58.2	1,818	728	705	1,428
Lake Superior & Ishpeming	Dec.	156	45	....	51	62	49	92	13	59	93	16	4	57	160	320	310.4	513.8	—108	49	—142	—267
	12 mos.	156	2,830	....	3,439	4,955	681	777	158	699	762	193	26	922	2,446	2,941	71.1	59.4	993	525	626	952
Lehigh & Hudson River	Dec.	96	257	....	257	268	40	47	7	29	28	8	15	87	183	190	71.1	71.0	74	Cr 26	73	27
	12 mos.	96	3,217	....	3,224	3,500	492	517	44	354	348	101	166	1,056	2,209	2,215	68.5	66.3	1,015	298	404	456
Lehigh & New England	Dec.	180	609	....	615	541	63	78	7	164	153	40	18	242	525	477	85.3	88.2	90	Cr 557	700	1,572
	12 mos.	180	6,748	....	6,805	8,120	939	1,044	86	1,710	1,638	477	169	2,317	5,598	5,721	82.3	70.4	1,207	358	1,656	3,128
Lehigh Valley	Dec.	1,154	5,009	382	5,712	5,742	1,015	1,433	149	1,171	1,369	208	140	2,429	5,015	6,195	87.8	107.9	697	Cr 345	919	649
	12 mos.	1,162	58,325	3,585	65,594	76,339	10,130	10,800	1,188	11,194	13,503	2,488	1,657	28,416	54,384	59,139	82.9	77.5	11,211	3,455	5,910	10,535
Long Island	Dec.	360	1,190	3,510	4,990	4,417	644	693	107	899	913	125	17	2,601	4,311	4,191	86.4	94.9	679	328	33	—414
	12 mos.	360	12,994	40,637	56,467	55,855	8,019	7,782	1,102	11,093	10,763	1,498	186	29,375	50,688	47,991	89.8	85.9	5,779	4,111	—1,900	—197

(Continued on page 38)

9 GOOD REASONS WHY FRISCO IS REPOWERING STEAM CRANES WITH CAT* DIESELS



1. **Fuel savings are estimated at $1 per working hour.**
2. **Crane is always ready for use—no water or morning firing needed.**
3. **Carries enough fuel for 100 hours of operation.**
4. **Some cities prohibit steam-powered cranes because of smoke.**
5. **Some states require expensive, coded boilers.**
6. **Monthly boiler inspections are eliminated.**
7. **Standby cranes do not have to be steamed up 24 hours a day.**
8. **Boiler insurance is eliminated.**
9. **Easier to inspect and clean.**

The St. Louis and San Francisco Railway Company is preparing to convert its entire steam crane fleet to diesel power! Frisco officials feel it is a logical step after converting all its main line locomotives.

The first crane repowered—as a test—was a 30-ton Browning. A Cat D318 Railroad Diesel was used because the job required steady, dependable power. Not only was the engine to replace the reversing steam engine, but it also was to drive the independent swing.

A Caterpillar Dealer sales engineer designed a special arrangement of gears and clutches to bridge the power gap left by the removal of the steam engine.

The powerful D318 was equipped with a torque converter. The engine, through its torque converter, chain drives a jackshaft running parallel to the engine. This jackshaft transmits power to two swing clutches mounted on a fabricated steel base. Bevel gears actuated by these clutches transfer power to the swing gear arrangement. The crane crankshaft is chain driven from the jackshaft.

Does it work? The answer is in Frisco's new orders. Two more cranes are being repowered with Caterpillar Diesel Engines and two more will be soon.

Follow the lead of leading railroads. When you repower, or order new off- or on-track equipment, specify Caterpillar Diesel Engines.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

FOR HIGH-PROFIT PERFORMANCE— SPECIFY CATERPILLAR

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF DECEMBER AND TWELVE MONTHS OF CALENDAR YEAR 1954

Name of Road	Average mileage operated during period	Operating Revenues: Freight	Pass.	Total 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Louisiana & Arkansas	Dec.	753	2,082	50	2,225	2,427	190	860	49	261	560	87	78	680	1,290	2,279	58.0	93.9	935	366	509	244
	12 mos.	752	23,868	625	25,555	30,476	3,120	5,542	289	3,149	4,104	1,059	893	7,193	15,298	19,046	59.9	62.5	10,257	4,194	5,322	6,003
Louisville & Nashville	Dec.	4,734	14,510	1,151	17,210	17,759	3,098	2,635	419	3,237	3,871	817	379	6,115	13,587	13,901	78.9	78.3	3,623	2,074	2,327	2,784
	12 mos.	4,734	171,270	11,051	196,842	232,983	33,502	32,937	2,958	43,332	46,252	11,165	4,185	71,902	161,063	168,867	81.8	72.5	35,779	20,322	23,922	34,384
Maine Central	Dec.	944	1,714	121	1,946	2,043	329	299	32	348	398	78	22	749	1,544	1,571	79.3	76.9	402	50	325	192
	12 mos.	944	21,178	1,269	24,247	25,408	5,155	5,174	346	4,561	4,303	925	247	8,837	19,913	19,617	82.1	77.2	4,335	1,722	1,825	2,491
Midland Valley	Dec.	334	157	....	159	125	62	54	5	15	13	4	6	61	156	153	98.1	121.6	3	19	—28	—19
	12 mos.	334	2,038	....	2,077	2,505	509	588	64	144	194	46	63	649	1,473	1,665	70.9	66.5	604	256	184	262
Minneapolis & St. Louis	Dec.	1,397	1,647	3	1,721	1,605	264	239	32	236	263	76	107	597	1,295	1,322	75.3	82.4	426	255	191	174
	12 mos.	1,397	19,681	57	20,543	22,001	3,518	3,820	368	3,203	3,243	912	1,259	7,053	16,275	17,019	79.2	77.4	4,268	2,350	1,788	2,124
Minn., St. Paul & S. Ste. Marie	Dec.	3,224	2,830	71	3,087	2,403	680	717	141	841	739	104	74	1,295	3,011	3,017	97.5	125.5	76	131	1	—436
	12 mos.	3,222	35,996	979	39,190	39,707	8,334	8,988	690	7,581	8,212	1,215	959	14,993	33,455	35,412	85.4	89.2	5,734	3,019	2,514	1,433
Mississippi Central	Dec.	148	184	....	189	215	45	65	2	26	29	6	14	55	149	180	79.2	83.9	39	12	13	14
	12 mos.	148	2,362	—1	2,408	2,741	641	714	29	317	368	71	165	608	1,851	2,068	76.9	75.4	557	213	226	263
Missouri-Illinois	Dec.	172	483	....	485	447	53	66	4	66	70	26	13	125	267	283	55.1	63.2	218	73	152	90
	12 mos.	172	5,242	1	5,275	5,731	853	932	47	899	903	317	122	1,340	3,344	3,566	63.4	62.2	1,931	701	1,287	965
Missouri-Kansas-Texas Lines	Dec.	3,241	5,208	327	6,188	6,626	937	987	106	896	1,096	232	231	2,371	4,749	5,218	76.8	78.8	1,439	192	775	777
	12 mos.	3,241	62,318	3,336	72,548	85,546	10,644	13,135	1,232	11,013	13,342	2,857	2,909	28,092	56,311	62,854	77.6	73.5	16,238	4,560	7,157	9,485
Missouri Pacific	Dec.	6,919	16,024	931	19,071	18,218	2,956	4,035	456	3,501	3,847	801	451	6,785	14,358	16,666	75.3	91.5	4,713	1,149	3,011	799
	12 mos.	6,924	182,367	10,107	213,362	233,262	36,058	45,720	3,834	38,553	47,524	9,601	5,586	79,821	167,824	194,136	78.7	81.5	45,538	12,511	25,409	23,414
International-Great Northern	Dec.	1,103	2,266	178	2,812	2,675	507	536	28	481	515	123	59	1,113	2,289	2,440	81.4	91.2	523	Cr 5	472	214
	12 mos.	1,103	27,214	1,722	31,852	37,237	6,033	7,974	451	5,714	6,802	1,435	729	13,273	27,186	31,559	85.4	84.8	4,666	1,110	2,836	3,574
Gulf Coast Lines	Dec.	1,724	3,029	73	3,367	3,468	591	906	61	562	508	114	92	1,114	2,504	2,909	74.3	83.8	863	Cr 43	725	428
	12 mos.	1,724	36,492	973	40,180	43,217	7,914	9,976	684	6,103	6,504	1,324	1,098	13,590	30,455	33,445	75.8	77.3	9,725	1,096	6,201	5,225
Monongahela	Dec.	177	446	....	446	502	61	—180	15	77	82	13	1	149	294	108	65.9	21.6	152	20	15	265
	12 mos.	177	5,587	....	5,623	7,726	884	1,098	191	763	838	166	9	1,976	3,751	4,687	66.7	60.7	1,872	320	142	710
Montour	Dec.	51	111	....	127	168	14	39	2	48	74	17	1	51	123	187	97.1	111.3	4	38	19	63
	12 mos.	51	1,538	....	1,649	2,643	173	392	30	576	915	212	12	655	1,530	2,280	92.8	86.3	119	396	480	668
Nashville, Chatt. & St. Louis	Dec.	1,043	2,710	150	3,332	3,056	441	431	48	440	522	138	131	1,205	2,323	2,388	69.7	78.1	1,009	439	582	427
	12 mos.	1,037	30,385	1,533	35,955	39,946	5,795	6,214	522	5,001	5,902	1,647	1,430	13,502	27,121	28,667	75.4	71.8	8,835	3,920	4,650	5,838
New York Central	Dec.	10,713	44,828	10,196	62,553	64,787	6,157	8,594	1,011	9,039	12,116	2,504	788	29,435	48,095	55,710	76.9	86.0	14,458	4,222	8,333	6,072
	12 mos.	10,713	511,160	106,568	708,730	825,349	93,711	113,565	12,267	130,065	165,921	28,339	12,340	321,195	596,222	683,643	84.1	82.8	112,508	55,880	33,035	63,180
Pittsburgh & Lake Erie	Dec.	221	2,736	80	2,982	3,316	515	348	241	511	842	287	73	1,041	2,348	2,387	78.7	72.0	634	164	2,065	1,760
	12 mos.	221	30,605	789	33,236	49,259	5,057	6,221	695	10,199	12,440	3,460	915	13,079	31,867	38,093	95.9	77.3	1,369	2,749	9,586	14,690
New York, Chicago & St. Louis	Dec.	2,179	11,666	167	12,271	12,665	1,259	1,883	139	2,146	2,295	360	339	4,429	8,635	9,499	70.4	75.0	3,637	462	2,766	1,240
	12 mos.	2,184	138,165	1,811	144,922	167,364	16,378	20,467	1,840	23,509	26,783	4,241	3,825	52,950	101,980	113,860	70.4	68.0	42,941	19,875	18,665	21,772
New York, New Haven & Hartford	Dec.	1,769	6,737	4,559	12,944	13,822	1,380	2,984	312	2,174	1,993	446	238	6,073	10,791	11,790	83.4	85.3	2,153	Cr1,790	2,597	1,090
	12 mos.	1,770	82,522	49,886	149,987	165,029	19,647	27,641	3,281	22,795	24,307	5,012	2,453	67,131	121,470	132,973	81.0	80.6	28,517	7,419	9,249	9,928
New York Connecting	Dec.	21	914	....	1,001	321	90	118	25	20	18	....	....	82	194	224	19.4	69.9	806	78	751	58
	12 mos.	21	3,833	....	4,160	4,106	1,259	1,194	301	279	284	....	....	964	2,540	2,572	61.1	62.7	1,620	998	641	633
New York, Ontario & Western	Dec.	541	468	1	476	511	123	115	29	90	99	22	25	253	521	508	109.4	99.5	—45	60	—178	—104
	12 mos.	541	5,746	1	5,903	7,063	1,470	1,585	247	1,059	1,055	270	285	3,014	6,187	6,478	104.8	91.7	—284	461	—1,628	—762
New York, Susquehanna & Western	Dec.	120	480	45	556	464	42	52	9	58	62	13	8	220	354	359	63.6	77.4	203	28	125	27
	12 mos.	120	5,143	485	5,874	5,811	583	670	75	710	726	153	96	2,586	4,303	4,312	73.3	74.2	1,571	446	457	494
Norfolk & Western	Dec.	2,133	14,477	414	15,788	14,499	1,807	2,142	334	2,897	3,140	676	376	5,042	10,719	11,334	67.9	78.2	5,069	897	4,974	1,868
	12 mos.	2,134	158,028	4,049	170,060	189,560	24,705	27,132	3,747	35,892	40,230	8,094	4,000	53,682	125,630	136,450	73.9	72.0	44,429	27,492	26,076	27,727
Norfolk Southern	Dec.	605	757	....	770	915	358	308	140	147	148	28	51	269	880	823	114.2	89.9	—110	Cr 69	—72	83
	12 mos.	616	9,730	....	9,870	11,127	2,375	2,524	284	1,491	1,462	333	587	3,087	8,219	8,561	83.3	76.9	1,651	667	483	894
Northern Pacific	Dec.	6,866	12,269	703	14,235	14,546	2,004	1,959	297	2,758	2,848	502	417	6,007	11,973	11,790	84.1	81.1	2,262	782	1,696	771
	12 mos.	6,866	150,833	7,309	171,602	181,175	26,680	30,438	3,217	32,495	34,360	5,596	4,350	70,108	142,677	146,834	83.1	81.0	28,925	16,108	15,459	14,867
Northwestern Pacific	Dec.	331	888	3	875	909	298	284	22	75	124	4	6	363	765	801	87.4	88.0	111	Cr 29	6	—35
	12 mos.	331	12,996	44	13,319	13,041	3,438	3,545	254	1,065	1,308	50	68	4,170	8,996	9,714	67.5	74.5	4,323	1,501	959	669
Oklahoma City-Ada-Atoka	Dec.	132	81	....	82	80	17	41	2	1	3	....	2	34	61	77	74.0	96.3	21	5	3	99
	12 mos.	132	1,180	....	1,198	1,031	242	281	31	18	19	....	24	253	597	616	50.1	57.0	595	238	199	259
Pennsylvania	Dec.	10,034	48,474	11,253	68,279	73,875	6,744	12,777	1,463	14,428	17,791	2,930	682	32,874	57,825	75,410	84.7	102.1	10,454	5,665	1,450	—839
	12 mos.	10,050	628,135	126,504	848,805	1,034,395	96,785	141,593	17,116	181,852	230,368	35,482	14,242	384,140	712,746	864,523	84.0	83.6	136,059	58,929	48,061	74,796
Pennsylvania-Reading Seashore Lines	Dec.	358	555	90	661	714	52	646	27	112	102	22	7	482	692	1,326	104.6	185.7	—31	59	—233	—933
	12 mos.	358	7,026	2,019	9,313	10,135	2,170	3,167	267	1,242	1,268	262	140	5,897	9,920	11,589	106.5	114.3	—607	712	—3,075	—4,683

(Continued on page 42)

NEW GERRARD BOXCAR BARRICADES, made with Fiberglas-reinforced weatherproof paper, seal grains, malts and chemicals inside, ease destructive pressure on car doors (see diagram below), make possible faster, cheaper unloading.

BEHIND THE PAPER CURTAIN: REVOLUTION

Shipping costs fall as Fiberglas-reinforced weatherproof papers take over

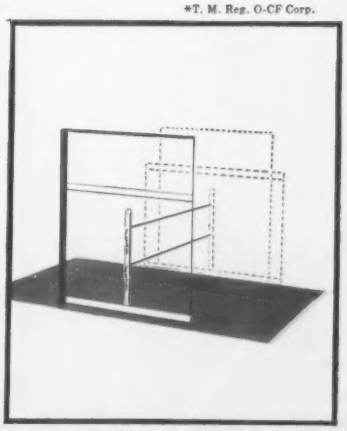
CONTROLLED-FLOW UNLOADING is achieved with new Gerrard barricade by cutting hole of any desired size in tear-resistant, vermin proof Fiberglas-reinforced weatherproof paper.

If two years of tests in more than 10,000 loadings are any indication, the disposable, lightweight boxcar barricades recently developed for grain, malt and chemical shipments by A. J. Gerrard & Company, Melrose Park, Ill., will soon be saving the railroad industry hundreds of thousands of dollars annually.

These revolutionary, easily-installed barricades are but one of countless innovations in shipping, packaging, shrouding, wrapping and covering made possible by high-strength, low-cost Fiberglas*-reinforced weatherproof papers.

Write today for free samples of Fiberglas-reinforced weatherproof papers and Fiberglas-reinforced tapes, plus a complete listing of converters. Address Owens-Corning Fiberglas Corporation, Dept.21-B-21, 598 Madison Ave., New York 22, N. Y.

*T. M. Reg. O-CF Corp.



CENTER HARNESS ASSEMBLY of new Gerrard barricade — two oak posts and two straps — absorbs half the outward thrust of cargo, adjusts to all car widths, is completely reusable.

Six Years on the Frisco

Records are based on performance.

Here's the performance of Fairbanks-Morse switching locomotives in the Tulsa Terminal on the Frisco:

Fairbanks-Morse locomotives

... 12% of the terminal fleet
... 17% of the terminal switching
... at only 9% of the total fleet repair cost.

That's the record of Fairbanks-Morse performance that has contributed to the outstanding success of the Frisco.

Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE

a name worth remembering when you want the best

DIESEL LOCOMOTIVES AND ENGINES • RAIL CARS AND RAILROAD EQUIPMENT • SCALES
ELECTRICAL MACHINERY • PUMPS • WATER SERVICE EQUIPMENT • MAGNETOS

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF DECEMBER AND TWELVE MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc misc.) 1954	Total (inc misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Pittsburg & Shawmut	Dec.	97	120	....	121	197	23	53	4	46	59	12	4	37	125	195	103.7	99.1	—4	3	23	57
	12 mos.	97	1,828	....	1,840	2,432	371	571	44	580	649	141	54	449	1,585	2,026	86.1	83.3	255	63	559	711
Pittsburgh & West Virginia	Dec.	132	572	....	576	579	101	94	24	126	83	36	68	177	511	460	88.8	79.5	65 Cr	223	284	120
	12 mos.	132	7,269	....	7,306	8,984	1,175	1,525	287	1,444	2,002	433	747	2,040	5,845	6,845	80.0	76.2	1,461	56	1,307	1,452
Reading	Dec.	1,305	8,405	635	9,769	10,174	1,189	1,657	203	2,188	2,379	430	169	4,050	8,073	8,815	82.6	86.7	1,696	151	1,069	1,186
	12 mos.	1,305	95,107	6,734	109,486	132,826	13,695	20,247	2,410	21,940	27,221	5,223	1,910	44,120	86,653	103,257	79.1	77.7	22,833	6,882	13,475	16,894
Richmond, Fredericksburg & Potomac	Dec.	118	1,347	515	2,295	2,276	266	346	21	405	313	63	22	812	1,640	1,539	71.5	67.6	655	292	262	331
	12 mos.	118	16,240	5,882	25,848	27,497	3,508	4,515	302	4,052	3,606	834	268	8,771	18,164	18,744	70.3	68.2	7,684	3,504	2,791	3,174
Rutland	Dec.	392	341	....	381	421	51	223	4	60	61	13	25	163	329	503	86.3	119.5	52	29	—3	—124
	12 mos.	392	4,058	—1	4,551	5,069	898	1,072	84	658	745	149	277	1,907	4,057	4,655	89.1	91.8	494	303	—127	—191
Sacramento Northern	Dec.	265	198	....	212	164	39	95	6	16	14	3	2	72	143	232	67.7	141.4	68	9	48	—50
	12 mos.	265	2,516	1	2,618	4,334	746	811	98	183	224	43	27	890	1,985	2,274	75.8	52.5	633	205	191	1,100
St. Louis-San Francisco	Dec.	4,601	9,044	377	10,332	11,379	1,482	1,328	168	1,389	1,572	527	369	3,967	7,737	7,923	74.9	69.6	2,594	1,243	1,357	1,654
	12 mos.	4,601	101,148	5,045	115,339	129,965	17,993	19,458	1,838	19,214	20,839	6,215	4,232	45,080	92,702	96,985	80.4	74.6	22,637	9,921	11,165	15,216
St. Louis, San Francisco & Texas	Dec.	157	319	4	349	317	45	2	4	27	30	1	26	158	270	248	77.4	78.2	79	21	25	—23
	12 mos.	157	4,257	51	4,578	5,055	557	661	61	377	437	14	309	1,834	3,215	3,468	70.2	68.6	1,363	469	320	396
St. Louis Southwestern Lines	Dec.	1,561	4,926	26	5,116	5,563	451	1,808	67	417	1,044	109	179	1,371	2,587	4,866	50.6	87.5	2,529	475	1,773	3,881
	12 mos.	1,562	56,704	225	59,070	72,643	8,068	13,466	644	7,186	8,961	1,274	2,129	18,017	37,533	46,467	63.5	64.0	21,537	9,997	8,693	13,863
Seaboard Air Line	Dec.	4,064	10,969	1,101	13,581	13,409	2,152	2,210	344	2,304	2,446	535	354	4,337	9,683	9,873	71.3	73.6	3,898	1,065	2,481	2,168
	12 mos.	4,071	124,703	11,990	149,473	156,644	22,753	24,350	2,511	26,887	27,850	6,414	4,274	49,188	109,129	112,836	73.0	72.0	40,344	14,852	22,905	23,829
Southern Railway	Dec.	6,289	19,084	1,431	22,715	22,853	3,228	1,791	1,505	3,498	3,797	773	408	6,935	15,421	14,364	87.9	62.9	7,294	2,645	4,197	4,367
	12 mos.	6,287	212,394	15,494	249,080	275,212	35,359	35,878	4,258	44,029	49,066	9,423	5,015	79,489	176,101	186,400	70.7	67.7	72,979	33,938	34,557	41,986
Alabama Great Southern	Dec.	326	1,358	68	1,565	1,576	177	210	61	353	293	57	35	463	1,141	1,096	72.9	69.5	424	245	156	253
	12 mos.	326	15,086	760	17,486	19,862	2,674	2,904	399	3,498	4,052	710	415	5,376	12,962	14,020	74.1	70.6	4,524	1,873	2,265	3,005
Cinn., New Orleans & Texas Pacific	Dec.	337	3,209	168	3,631	3,556	996	2,533	566	695	687	133	74	817	2,790	4,469	76.9	125.7	841	528	388	—678
	12 mos.	337	37,417	1,807	41,747	46,845	6,246	7,424	1,051	7,229	9,542	1,586	876	10,260	26,430	30,974	63.3	66.1	15,317	8,525	6,876	7,008
Georgia Southern & Florida	Dec.	475	733	66	928	834	122	4	14	85	124	7	17	264	539	513	58.1	61.5	389	34	181	41
	12 mos.	423	7,883	768	9,596	9,917	2,342	1,854	116	846	921	78	225	3,146	7,092	6,291	73.9	63.4	2,504	472	146	683
New Orleans & Northeastern	Dec.	204	805	48	933	1,014	—119	—60	35	159	122	42	20	230	366	412	39.3	40.6	567	357	224	273
	12 mos.	203	10,469	517	11,808	13,630	2,038	1,770	260	1,765	1,524	498	243	2,787	7,546	6,914	63.9	50.7	4,263	2,616	1,672	2,544
Southern Pacific	Dec.	8,121	35,903	3,016	42,049	41,033	6,766	6,122	731	8,437	9,180	1,859	850	17,704	35,978	35,759	85.6	87.1	6,071	1,886	3,448	2,207
	12 mos.	8,120	431,208	34,164	498,865	546,127	62,880	65,838	6,442	104,847	113,660	22,352	10,319	198,701	401,274	422,014	80.4	77.3	97,590	42,231	42,135	47,106
Texas & New Orleans	Dec.	4,288	9,933	527	11,281	11,708	2,268	1,928	322	1,579	1,649	145	265	4,169	8,802	8,449	78.0	72.2	2,479	916	429	1,076
	12 mos.	4,290	112,571	6,275	127,350	145,958	23,964	24,151	1,955	18,086	19,723	1,730	3,279	47,431	99,538	103,928	78.2	71.2	27,812	9,867	6,039	12,214
Spokane International	Dec.	152	210	....	224	208	—2	9	2	9	13	10	6	38	59	106	26.4	51.1	165	78	64	43
	12 mos.	152	3,093	7	3,255	3,357	516	645	33	295	278	115	66	851	1,873	1,955	57.5	58.2	1,382	413	660	655
Spokane, Portland & Seattle	Dec.	944	2,318	94	2,589	2,162	471	319	47	315	312	107	32	864	1,788	1,595	69.0	73.8	801	102	655	313
	12 mos.	944	26,722	957	29,443	31,009	4,470	4,572	608	4,516	4,198	1,281	354	9,858	20,349	20,913	69.1	64.5	9,094	2,359	5,802	5,900
Tennessee Central	Dec.	286	402	1	402	416	73	97	6	65	77	22	13	123	301	354	74.9	85.1	101	29	23	55
	12 mos.	286	4,369	15	4,585	5,159	908	1,103	69	712	823	264	153	1,507	3,588	4,042	78.3	78.3	997	299	233	420
Texas & Northern	Dec.	8	131	....	136	93	5	1	....	11	7	2	1	—1	20	25	14.6	27.1	116	2	75	202
	12 mos.	8	942	....	992	1,448	48	56	5	102	89	30	12	83	303	350	30.6	24.2	689	16	411	491
Texas & Pacific	Dec.	1,831	6,025	398	7,353	6,787	1,101	1,132	160	1,070	1,131	247	191	2,180	4,878	5,104	66.3	75.2	2,475	1,141	953	966
	12 mos.	1,832	66,754	4,147	77,801	86,485	11,971	12,774	1,279	12,885	13,395	2,937	2,290	25,699	56,967	59,568	73.2	68.9	20,834	8,464	8,179	12,531
Texas Mexican	Dec.	161	237	....	243	307	59	51	7	38	32	10	11	67	194	172	79.7	56.2	49 Cr	13	42	38
	12 mos.	161	2,519	....	2,677	3,439	667	658	72	368	381	117	111	741	2,120	2,151	79.2	62.5	557	173	138	382
Toledo, Peoria & Western	Dec.	239	529	....	533	522	68	90	6	77	—57	11	60	147	412	299	77.3	57.3	121	26	36	—35
	12 mos.	239	6,781	....	6,883	7,751	1,079	1,272	78	689	611	135	561	1,610	4,429	4,624	64.3	59.7	2,454	1,006	734	862
Union Pacific	Dec.	9,813	33,463	2,624	39,928	41,961	5,597	5,566	642	7,923	8,894	1,614	1,207	16,235	33,385	34,428	83.6	82.0	6,543	4,602	563	79
	12 mos.	9,817	413,156	31,575	481,786	530,024	62,622	72,091	5,725	88,891	100,179	17,965	12,267	175,994	365,859	400,427	75.9	75.5	115,928	63,687	29,562	28,860
Utah	Dec.	99	122	....	122	144	16	7	2	13	37	9	1	39	73	94	60.0	65.3	49	2	49	28
	12 mos.	104	1,062	....	1,064	1,332	187	222	22	405	473	108	9	375	1,067	1,240	100.3	93.1	—3	93	—59	70
Virginian	Dec.	611	3,448	1	3,591	2,914	312	562	118	728	633	201	49	776	1,972	2,129	54.9	73.1	1,619	700	1,071	650
	12 mos.	611	35,626	15	36,974	37,917	5,017	5,663	803	7,827	8,895	2,351	547	8,362	22,844	25,846	61.8	68.2	14,130	7,951	8,374	7,374
Wabash	Dec.	2,393	8,240	473	9,684	9,710	873	943	127	1,122	1,178	356	320	3,949	6,751	6,955	69.7	71.6	2,933 Cr	1,335	3,706	1,148
	12 mos.	2,393	96,036	4,853	109,922	122,210	13,776	15,199	1,509	15,533	15,809	4,326	3,650	46,596	84,502	88,784	76.9	72.6	25,419	5,761	12,137	13,504
Ann Arbor	Dec.	294	707	....	714	698	73	62	5	107	158	30	30	324	554	606	77.6	86.8	160	2	127	68
	12 mos.	294	8,542	8	8,735	9,443	1,092	1,181	82	1,570	1,560	364	342	3,902	7,156	7,211	81.9	76.4	1,580	536	688	980
Western Maryland	Dec.	847	3,185	4	3,408	3,807	1,230	942	325	966	752	218	94	1,160	3,671	3,433	107.7	90.2	—263 Cr	3,114	2,968	457
	12 mos.	855	38,842	45	41,418	50,754	6,882	6,900	1,417	8,101	8,902	2,607	1,147	13,325	31,836	33,906	76.9	66.8	9,582	1,293	10,234	10,445
Western Pacific	Dec.	1,193	3,679	175	3,940	4,162	851	737	200	649	724	177	197	1,287	3,311	3,491	84.0	83.9	629 Cr	22	542	392
	12 mos.	1,193	44,704	2,351	48,119	59,245	8,755	9,789	1,085	7,881	8,077	2,085	2,372	15,193	37,174	39,982	77.3	67.5	10,945	4,317	5,667	8,526
Wisconsin Central	Dec.	1,042	2,132	49	2,345	2,157	283	570	42	542	456	74	66	1,087	2,092	2,265	89.2	105.0	253 Cr	185	323	—70
	12 mos.	1,042	26,574	490	28,825	31,873	4,634	4,827	457	5,012	5,453	925	850	11,932	23,743	24,909	82.4	78.2	5,082	1,282	2,135	2,842

(Continued from page 38)

GM&O

Finds SPERRY RAIL SERVICE Effective Protection for 24 Years

"Efficient rail testing is the best protection against rail failures," says Mr. B. V. Bodie, Chief Engineer, Gulf, Mobile & Ohio Railroad. "That's why we've employed Sperry Rail Service continuously since 1931, and consider it a most important part of our maintenance of way program."

"This line-up of modern GM&O motive power illustrates the progressive trend to more powerful, higher speed equipment. With such equipment, we offer superior service," Mr. Bodie continues, "but it places increased burdens on the rails. And, since each defective rail can mean a derailment, we want defects located while small, before rapid or sudden growth causes failure. It is reassuring that, of the total defects found by Sperry in our rail testing program over the last few years, 90% have been small."

"Our aim is to provide the fastest, safest railroad service possible for our freight and passenger customers. This heavy machinery cut, for example, will be consolidated into fast GM&O freight service. We insure safety by emphasizing soundness of rail," adds Mr. Bodie, "and we do so at low cost per mile of track with Sperry Rail Service. Some parts of the GM&O are tested every six months, others every twelve and eighteen months, depending on speed and density of traffic and general rail condition. Saving in accidents prevented is immeasurable."

"We schedule rail testing in cooperation with other railroads in our territory to make maximum use of the Detector Car at minimum cost, a practice advantageous to all concerned," Mr. Bodie explains. "Too, by having an engineering representative and a trainmaster accompany the testing crew to coordinate timing during our rail inspection, we achieve minimum delays to both our high-speed passenger and freight trains and the Sperry Car."

Sperry has pioneered the field of nondestructive testing and has been one of the leaders for more than a quarter century. Sperry's contributions to railroad safety also include the Ultrasonic Car for testing rail within joint bar limits, and the Ultrasonic Reflectoscope for detecting hidden defects in diesel axles, car wheels and other vital components. Call or write for information.

Sperry

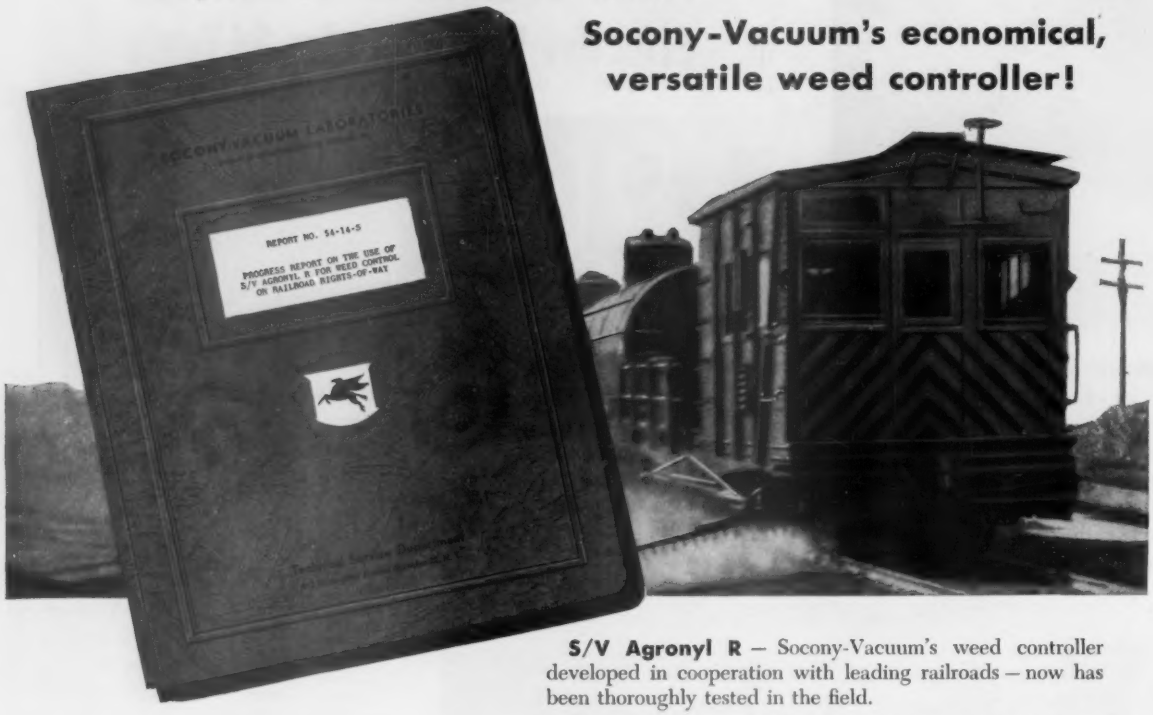
FIRST IN RAIL TESTING

SPERRY RAIL SERVICE

Division of Sperry Products, Inc.
Danbury, Conn.
New York Chicago St. Louis

PROGRESS REPORT ON S/V AGRONYL R

Socony-Vacuum's economical, versatile weed controller!


SOCONY-VACUUM LABORATORIES
REPORT NO. 54-14-S
PROGRESS REPORT ON THE USE OF S/V AGRONYL R FOR WEED CONTROL ON RAILROAD RIGHTS-OF-WAY

S/V Agronyl R – Socony-Vacuum's weed controller developed in cooperation with leading railroads – now has been thoroughly tested in the field.

Last year it was used by 14 railroads on rights-of-way as far apart as the Gulf of Mexico and the Canadian border. Thus, users had an opportunity to observe *S/V Agronyl R* under practically every kind of climate condition and on all typical roadbed vegetation in this wide area.

The results are now available in our Technical Service Laboratory Report No. 54-14-S . . . "Progress report on the use of *S/V Agronyl R* for weed control on railroad rights-of-way." This is the most complete summary of data ever compiled on the correct application of herbicidal oil to assure effective weed control.

Copies of Report No. 54-14-S are available to all railroad chief engineers and their staffs. Personal consultations regarding results covered by the report, and their application to your problems, will be arranged without obligation. Simply write us, or call your Socony-Vacuum representative.

Railroad Lubricants

Socony-Vacuum Oil Co., Inc.

RAILROAD DIVISION

26 Broadway, New York 4, N. Y.
59 East Van Buren Street, Chicago 5, Ill.

TYPICAL RESULTS OBTAINED WITH S/V AGRONYL R

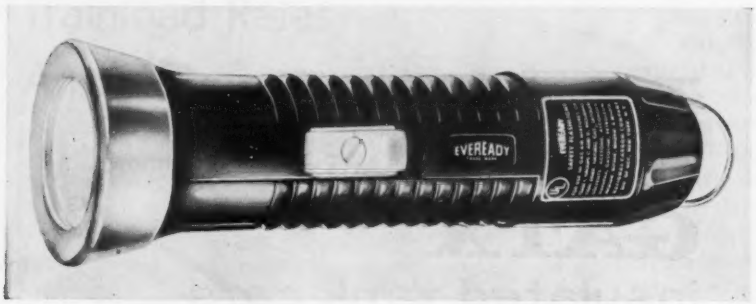
Four-week hold-down, Alabama

Seven-week hold-down, Central Illinois

Nine-week hold-down, So. Minnesota

Ten-week hold-down, Oklahoma

What's New in Products



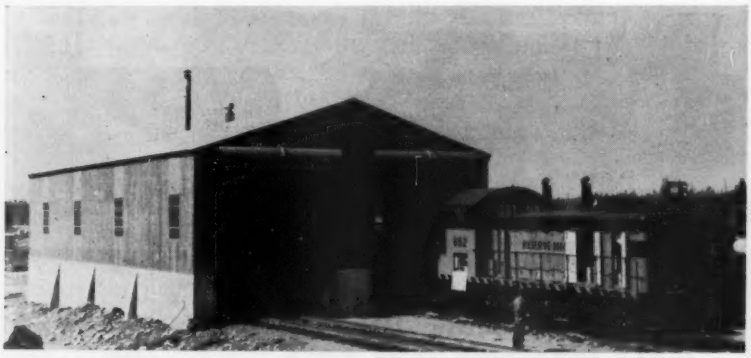
Industrial Flashlights

These units are recommended for use by railroads and other industries requiring rugged dependability, long life and safe operation. They have been made available in two heavy-duty styles, one an approved safety type.

One type has an insulated ethyl cellulose case that will not shatter, crack nor dent and is resistant to temperature extremes. It has a self-lubricating, hand-replaceable insulated slide switch and a special lens guard made of polyethylene.

The safety unit is approved by the U. S. Bureau of Mines. It has the same features as the other model, plus an extra lamp in the bottom cap. The device is so designed that if the lamp is broken, the filament is snuffed out before it can ignite inflammable or explosive mixtures of gas.

Both units are available in either the two-cell or three-cell sizes, with a ring hanger and lateral-grooved case for sure grip. *National Carbon Company Division of Union Carbide & Carbon Corp., 30 East 42nd st., New York 17* ●



Steel Buildings

Reduced weight and more efficient design of an interlocking steel-paneled building are reported to result in economies of more than 10 per cent over older models. The new model is the Series S 40-ft building.

Lightweigh bar joists make possible the use of somewhat lighter load-bearing roof panels, resulting in a lower erection cost and reduced freight costs. A reduced roof-load design is also available which provides increased structural spacing for the more southerly states. Another improvement provides additional wall caps at the eave, and an improved ridge design provides for more positive weather tightness and protection against fine blowing snows.

The new buildings are available in heights up to 20 ft, and the 40-ft structures can be placed side by side or end to end, thus making the total floor area to be enclosed virtually unlimited. Columns are placed every 40 ft in one direction and every 20 or 32 ft, as required, in the other direction.

Leanto's are also available, and combinations of these units with the main building can provide extra floor space in some cases for as much as 50 per cent under the price of a complete building. *Armco Drainage & Metal Products, Inc., Middletown, Ohio* ●

Aluminum-Coated Steel

Armco Aluminized Steel Type 2 is said to combine the corrosion-resisting and heat-reflecting qualities of aluminum with the strength of steel. Several thousand tons of the product have been used in development work in prefabricated industrial, commercial and farm buildings, industrial rolling doors, water storage tanks, roof decks, and other applications under general atmospheric conditions.

The steel is reported to have the same high reflectivity of radiant heat as aluminum. Resistance to fire damage is said to be much better than that of aluminum or galvanized steel. The coating withstands temperatures up to 900 deg F with no change whatever, and temperatures up to 1,250 deg F without serious damage to the coating.

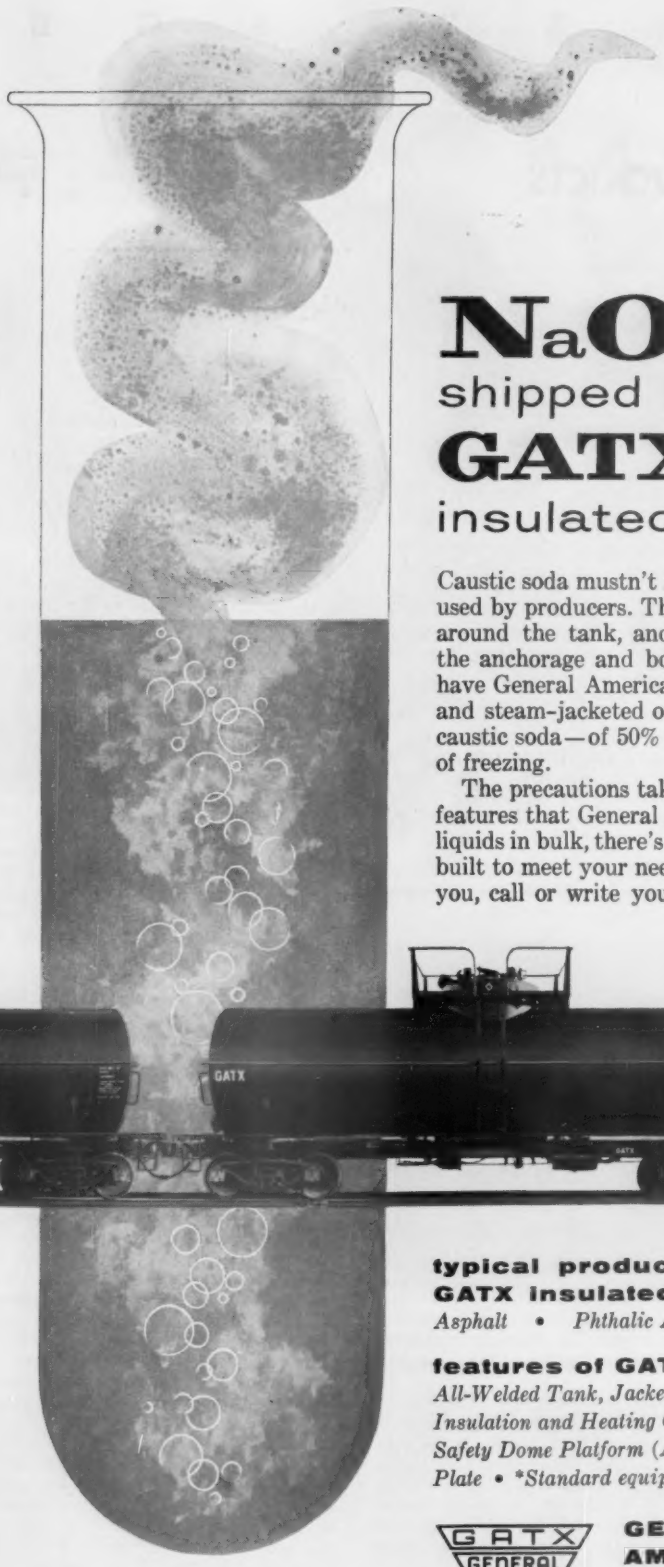
Coefficient of expansion is said to be only half that of aluminum. This means less trouble from buckling or tearing at nail, rivet or bolt holes when sections or panels undergo heating and cooling cycles. It can be embossed and spun, but it is not recommended for drawing operations. Welding is easily done by all conventional methods but a satisfactory method of soldering is still under development.

Cost savings are pronounced because the greater strength of the steel base permits use of lighter gages. The product does not require painting to extend service life. *Armco Steel Corporation, Middletown, Ohio* ●

Special Steel Plate

"T-1" steel is available in commercial plate sizes. It is said to have a yield strength three times that of ordinary carbon steel; excellent welding qualities without preheating; toughness at subzero temperatures; and resistance to wear and impact abuse. Considering its high strength, the steel is relatively inexpensive, costing about 2½ to 3 times as much as ordinary carbon steel.

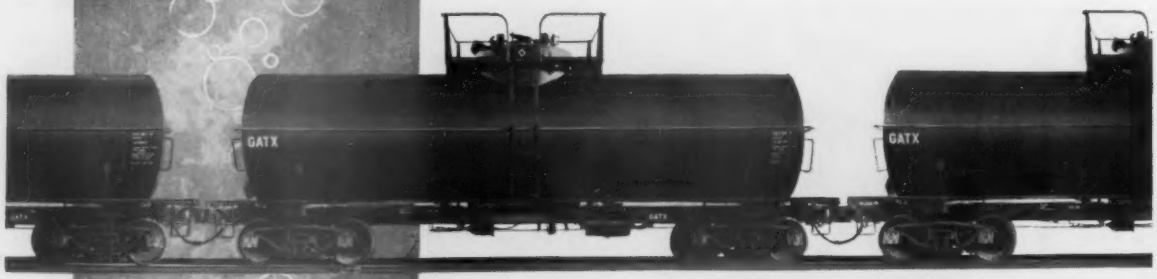
A special formula produces the toughness in the steel. Maximum benefits are derived from minimum quantities of the various alloying elements. According to the manufacturer, it is an all-purpose steel developed primarily to be used in plate form. Initial production will be for general industrial equipment, bridges, earth-moving and construction machinery. *Lukens Steel Company, Coatesville, Pa.* ●



NaOH
shipped best in
GATX
insulated tank cars

Caustic soda mustn't freeze. That's why GATX insulated cars are used by producers. These tank cars have six inches of insulation around the tank, and also specially-designed insulation around the anchorage and bolster areas. In addition, caustic soda cars have General American's exclusive half-oval exterior heater coils and steam-jacketed outlets. Thus, manufacturers can safely ship caustic soda—of 50% and 73% concentrations—with little chance of freezing.

The precautions taken to protect caustic soda are typical of the features that General American builds into tank cars. If you ship liquids in bulk, there's a General American car that's built or can be built to meet your needs. To learn how GATX tank cars can help you, call or write your nearby General American district office.



typical products successfully shipped in GATX insulated tank cars • *Molten Sulfur* • *Wax Asphalt* • *Phthalic Anhydride* • *Wine* • *Rosin* • *Latex*

features of GATX insulated tank cars*

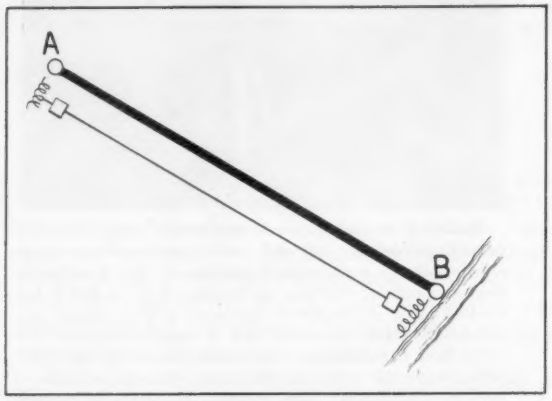
All-Welded Tank, Jacket and Underframe • *Flued Dome Construction Insulation and Heating Coils* • *Choice of Interior Linings (Available) Safety Dome Platform (Available)* • *One-Piece Longitudinal Bottom Plate* • **Standard equipment unless otherwise noted*

GATX GENERAL AMERICAN TRADE MARK

GENERAL AMERICAN TRANSPORTATION CORPORATION

135 South La Salle Street • *Chicago 90, Illinois*

Trainload Rates— An Answer or a Mirage?



Will the Btu's Move in Coal Cars or by Wire?

What has been the greatest single deterrent to the making of rates by the railroads to hold and regain competitive traffic? Isn't the most serious impediment the fact that: *making reductions to attract new traffic also entails loss of revenue on traffic now moving by rail?* Has it not often happened, in determining rate policy, that the certain and calculable losses to be sustained on traffic currently moving by rail have been a stronger factor than the hypothetical profits from traffic expected to be regained?

The deterrent of reduced earnings on existing traffic has lost much of its force in recent years —as many commodities, and some profitable lengths of haul on practically all traffic, have been almost completely lost to the railroads. Nowadays, when railroads make rates to recover some of the enormous traffic volume which falls in the "100 per cent lost" (or "paper rate") category, there is no longer any offsetting loss to worry about. The incentive that now exists to change "paper rates" into rates which will actually move traffic, thus, hasn't any negative aspect — provided, of course, that the new rates will still be high enough to have a profit margin in them.

But there is one important traffic area where the certainty of losses on existing traffic still acts as a numbing impediment to rate innovations which might otherwise be very attractive. This is the area wherein there appear to be some persuasive reasons for making "trainload" or "quantity" rates—rates lower than those for single carloads. Let's look at the hypothetical but not unusual case which is pictured in the diagram (left).

A is a large and growing city, where the available water transportation does not make close connection with suitable coal. B is a point 200 mi distant which, via the A & B Railroad (the heavy line in the diagram), supplies most of A's industrial fuel—from local coal mines at B, and also from more distant mines by barge into B.

The local utility company at A is the city's biggest fuel user—about 50 carloads a day, all moving by rail from B. The utility company is confronted with the necessity of doubling its generating capacity, and has decided to build its new plant at B, near its fuel supply. This decision has been reached in spite of the fact that Btu's can travel more economically by rail in the form of coal than by wire in the form of electricity. The fact is, however, that railroad rates on coal from B to A are based more on "what the traffic will bear" than to give effect to the railroad's cost advantage over transmission of energy by high-tension lines (the lower and lighter line in the diagram). So the utility will save money by manufacturing its electricity at B.

If the A & B Railroad had put in "trainload rates" on coal from B to A, it might have induced the utility company to build its new generating plant at A, instead of B. In that event, the A & B Railroad could have looked forward to hauling 100 cars of coal a day into A for this utility, instead of the present 50 cars. On the other hand, the profit from hauling the 100 cars—with a lower "trainload rate" applying to all the utility's coal traffic—might not be any greater than the present profit on the existing 50 cars. By not making the "trainload rate," therefore, the railroad has held on to its favorable profit ratio on existing tonnage, but has shut off all hope for increased tonnage from this particular customer. What is even more serious, when present generating facilities at A wear out, they will doubtless be replaced by additional generating capacity at B—and all the railroad's coal traffic for this utility will be gone.

The utility companies, themselves, appear to have surmounted a similar pricing problem in their own business—in many instances by making rate concessions on only increased volume, not applying their reductions to existing volume.

In any event, halting the continued erosion of profitable traffic and establishing a dependable trend of future traffic growth should be a goal worthy of a lot of intensive study, and possibly a present sacrifice of considerable magnitude.

IN TRACK MAINTENANCE . . .

Automation for Short Lines?

Three separate plans by which smaller roads may realize the benefits of mechanization are suggested . . .

By ROYCE KERSHAW
President, Kershaw Manufacturing Company
Montgomery, Ala.

Maintaining track on a short-line railroad may seem on the surface to be little different from the situation on a larger road. Both have the same problems of maintaining their physical plants based on traffic density, type of traffic and the general condition of the property. The rates both charge are controlled rigidly by regulatory bodies, and the wage rates they pay are about on a par.

Nevertheless, when it comes to reducing maintenance expenditures the short lines are confronted with much more perplexing difficulties than are the Class I roads. During recent years, the larger lines have been able to lower their unit maintenance costs by increasing productivity through the use of labor-saving machines. Most short lines have been unable to adopt large-scale mechanization because of the large expenditure involved in purchasing maintenance machines. A railroad only 50 miles long obviously cannot justify an outlay of $100,000 for track reconditioning equipment.

On the other hand, the short lines simply cannot afford to continue the practice of digging in ties by hand at the rate of about eight ties per man-day and surfacing track with shovels at the rate of about 30 ft per man-day.

Questionnaire Sent to Short Lines

To obtain some idea of the current maintenance costs for labor on short line roads, I sent a questionnaire to each member of the Short Line Association. Twenty-six railroads with a total of 1,800 miles of track returned the questionnaire. From these reports, I find that the maximum cost per mile for labor is $3,804 per year and the minimum is $307, giving an average of $1,622.84 per mile per year. Maintenance labor costs run anywhere from a low of 3.94 per cent of a road's revenues to a high of 46.57 per cent. This compares with between 12 and 15 per cent for the Class I carriers. These statistics also show that the amount of track maintained per man ranged from a high of 4.31 miles to a low of 0.84 miles.

Naturally, we cannot use these comparisons in making up a standard because the class of maintenance varies considerably. Some short line roads maintain their tracks better than some Class I railroads. On the other hand, there are others still operating on 56-lb rail in the mud with ties so rotten that you can pull the spikes out by hand. Quite naturally, their maximum speeds are no more than 15 to 20 mph.

It is clear that the short lines cannot continue to maintain their tracks with picks, shovels, and other hand tools; yet they are not able, either, to justify the expenditures necessary for a complete package of reconditioning equipment. A way out of this dilemma, whereby the economies resulting from the use of machines may be realized, seems to lie in some sort of joint ownership, rental or contracting plan among groups of short lines.

In this realm of thinking, I have outlined three separate plans, each of which, in my opinion, offers a possible solution to the problem of mechanization:

1. One short line would purchase an entire package of reconditioning equipment, using it for a specified time during each year, then renting it to other short lines for the remainder of the year. This plan has certain merits, but it probably would be difficult to find a short line willing to put up the cash necessary to purchase the equipment. Another drawback to this plan is that misunderstandings and considerable difficulty could be expected in setting up a program for scheduling work on each of the participant roads. The provision of operators for the machines, repair of machines and transportation of the equipment to and from jobs would also present problems. Another difficulty would be training operators and foremen on the various roads.

2. Still another plan, employing a setup similar to a terminal company or association, might offer a workable solution. Many terminal companies are owned jointly by several participating railroads, with each road using the facilities and paying a portion of the expenses. At the end of a year, if the terminal company has made a profit, it may be divided among the roads based on the stock

Railroad man, railroad contractor and, latterly, manufacturer of railroad maintenance-of-way machines—that's a thumbnail outline of Mr. Kershaw's business career. Starting as a water boy in 1914, he worked as a steamshovel operator, a locomotive engineer, a track foreman and a superintendent. He went into the railroad contracting business in 1924 and completed about 2,000 miles of track construction, reconditioning and removal. In 1946 he started developing and manufacturing track-maintenance machines. That's what he is doing today.

*This article is based on an address entitled "The Economic Aspect of Labor-Saving Tools and Equipment for Short-Line Railroads," made at the recent Short Line Railroad Conference at Atlanta, Ga.

PROPOSALS FOR SHORT-LINE MECHANIZATION

***PLAN 1*—One short line would purchase a complete package of track reconditioning equipment, using the machines on its own road for part of the year and renting the outfit to other short lines the rest of the year.**

***PLAN 2*—Group of four or five short lines would form a track-maintenance company, equipping it with the necessary machines, house trailers and trucks, and staffing it with sufficient personnel to carry out a cycled program of tie renewals, surfacing and ballasting on the participating roads.**

***PLAN 3*—Group of several roads would turn their heavy track maintenance over to a railroad contractor who would perform work for a predetermined unit price. Lower unit price would be asssured by grouping several roads together.**

holdings of each member. Terminal companies and associations have worked this way for many years with success, and I can see no reason why a similar track-maintenance company owned jointly by four or five short-line carriers could not also be successful.

A high-production gang will recondition about two miles of track weekly or approximately 100 miles yearly. Assuming a five-year reconditioning cycle, a mechanized reconditioning gang would be able to make all tie renewals, perform heavy surfacing, reballasting, and, in fact, all of the heavy work on about 500 miles of track during each cycle. The mechanized gang I have in mind would be made up of approximately 24 laborers, one general foreman, two assistant foremen, one equipment maintainer and six machine operators.

The equipment required would, of course, depend upon the condition of the track. In most cases, though, these machines would be needed: A ballast reconditioning and regulating machine, mechanized tie-renewal equipment, a power jack, and a production-type tamping machine. The cost of such an equipment package would run in the neighborhood of $75,000. Since the gang would be moved several times yearly, I would recommend highway house trailers, rather than bunk cars, for housing the gang. The cost of a complete house trailer camp and truck is estimated at $35,500.

3. Another plan that deserves serious consideration is the contracting of all heavy maintenance to an outside party. A contractor certainly will use machines that will save him money, and I am sure that if five short lines would get together and let a contract for reconditioning 500 miles of track at the rate of 100 miles per year, a contractor would be able to make a very low and attractive price. Offhand, I would say that a bid could be obtained for around $2,500 to $3,000 per mile. This would include surfacing, retimbering, reballasting and everything to put the track in first-class condition.

Only Extra Expense—Patrol Gangs

Assuming that four or five short lines with a total of 500 miles of track would either organize a company as in Plan 2 or make a contract with a contractor as in Plan 3 to recondition all of their tracks, the only additional labor cost would be that for patrolling track. Some railroads now use a foreman and three men to patrol 30 or more miles of track. Since all of the heavy work is performed by the mechanized gang, about all the patrol gang has to do is pick up a low joint occasionally, clean out ditches and resurface soft spots.

With 500 miles of track 17 patrol gangs of 5 men each probably would be sufficient in most cases. Based on the average man-hour rate reported, these patrol gangs would cost about $14,300 per year. Adding to this 30 per cent for pensions, vacations and miscellaneous, we have a total of $18,600 or about $620 per mile per year. Assuming that the heavy maintenance on a five-year cycle would cost a maximum of $2,500 per mile for labor and equipment, whether done by contract or by a railroad-owned maintenance company, the total cost would be $500 per mile per year for heavy maintenance plus $620 per mile per year for patrolling, giving a total of $1,120 per mile per year. This compares with a present yearly average, as obtained from the questionnaire, of about $1,623 per mile.

These production and cost figures are not just the result of wishful thinking. Our contracting organization is a guinea pig for the development of our own equipment. Ten years ago, we used 60 and 70 men in our track-reconditioning gangs. This has been reduced every year until just recently our organization completed a four-mile reconditioning job at Huntsville, Ala., using six men and one foreman to replace 1,800 ties, unload ballast and surface 3.6 miles of track. However, they used every machine that we manufacture, in addition to machines of other manufacturers and a number of units that we have under development. We have found through our studies that a complete track reconditioning job can be done for from $1,500 to $2,500 per mile for labor and equipment.

Housing, Transportation No Problem

Should the short lines decide to organize companies specifically for the purpose of purchasing and operating reconditioning equipment, housing and transportation should not be any problem. Our own contracting organization has been equipped with highway trailers, which have proved quite satisfactory. Trailer units of many types and designed for a number of uses are available from various manufacturers. Some of the units available include bunk trailers for 6 to 15 or more men, kitchen trailers, dining trailers, office trailers and self-contained living units.

Even though one short line may be 100 miles or more from another, there would be no difficulty in moving the camp over the highway. Work could be scheduled so that the gang could finish up on Friday and move over the weekend to the new location, ready to begin work Monday morning. Equipment can also be transported by truck over the highways. Any number of roads are now using trucks to transport their work equipment from one location to another, and many are using trucks to transport section forces and extra gangs.

TELEVISION RECEIVERS IN YARDMASTER'S OFFICE depicting operations at any of 13 locations in yard are being controlled by A. E. DeMattei, superintendent of communications.

TV 24 Hours a Day in SP Yard

Night testing of industrial television is being conducted by the Southern Pacific at Taylor yard in Los Angeles, looking toward possible 24-hour coverage of an entire railroad yard. Day tests at the same location, beginning in August 1954, demonstrated the capacity of TV cameras to view all railroad car movements in daylight in a large yard from a central point.

According to A. E. DeMattei, SP superintendent of communications, the two series of tests are the first of their type on any railroad. "We are experimenting," he said, "with a system whereby a railroad yard two miles long can be viewed day and night by means of 13 television cameras. Eight of the cameras, in fixed positions and with wide-angle lenses, are intended to give the yardmaster a view of the entire yard. Five telephoto cameras are employed to enable him to select a particular section of the yard and obtain a close-up view."

The big question SP technicians expect the night tests to answer is how much additional lighting must be installed in a big area such as Taylor yard—covering more than 10 million square feet—to provide satisfactory nighttime TV reception. For the present tests 30-unit banks of 300-watt sealed-beam lamps were installed atop a 110-ft tower to replace conventional floodlights.

A new and compact industrial TV camera, 4½ by 6½ by 10 in., and weighing only 8½ lb, was installed at the 95-ft mark on the light tower, being connected by cable to the TV viewer in a building 400 ft distant.

Remote control mechanisms effective up to 3,000 ft enable the operator to swing the camera 340 deg or nearly full-circle, to select any of its four lenses and control the optical focus of each. Also being tested, but operated manually from a lower level, is a similar camera fitted with a variable-focus magnifying lens and two wide-angle lenses. Two industrial TV viewers with 14-in. screens receive images from the two cameras.

In a permanent installation, cameras would be housed in all-weather boxes fitted with automatic temperature controls, windshield wipers and remote-control devices.

COMPACT TELEVISION CAMERA, shown here as being used by technician, is similar to the camera in service on tower 95 ft above yard and remotely operated from yardmaster's office.

BANK OF 30 SEALED-BEAM LAMPS as additional lighting for night television tests are near top of 110-ft tower just below five conventional floodlights.

TRANSPORTATION SEMINAR in the Car Service Division of the AAR has Chairman Arthur H. Gass presiding while Caleb R. Megee, vice-chairman, lectures, and Eugene W. Coughlin, railroad relations manager, seated at Mr. Gass' right, looks on. Course stresses car service work but takes in all phases of AAR activities and railroad industry.

Training for Car Service Staff

How transportation seminar, now one year old, readies AAR personnel for executive posts, grooms a successor for the chairman

There are about 20 young men in the Car Service Division of the Association of American Railroads who are "after the boss's job." A strange thing about it is that "the boss" is a willing party to their ambitions.

"The boss"—Chairman Arthur H. Gass—says he wouldn't want these particular men in the jobs they hold if they didn't have designs on his big corner office, not to mention the prestige, responsibilities and headaches that go with it.

One way he helps them along the way is by his active support of a transportation seminar designed to give these would-be chairmen some of the broad and detailed knowledge of railroading that he and others of his executive staff have acquired through years of experience on the roads.

Growing Like Topsy

This informal course had its beginnings just over a year ago in some general discussions among these staff members and associates on the need for some means of exchanging information on Car Service Division work. It has developed into a project as far-reaching as the CSD operations themselves. Strictly a voluntary affair, the seminar is conducted on a semimonthly basis by Caleb R. Megee, division vice-chairman, and Eugene W. Coughlin, manager of railroad relations. They serve as guiding principals of the course with Mr. Gass and offer the lessons of their long careers to "students" bothered by problems about railroading that only experience can solve.

Mr. Megee described the course in a letter announcing it to CSD departments as "covering subjects pertinent to the railroad industry and most especially the scope of activities supervised by the Car Service Division." It was to be a means for CSD personnel to learn not only the background of their own particular assignments but also the nature of all the division's activities.

"Curriculum" Unconfined

But there was no attempt to confine the course to car service work or even to the operations of the AAR.

Obviously, the interests of the "students" could not be restricted to their own immediate jobs and more than one meeting has produced lively discussions on such topics as "What is a railroad system?" and "Is it true what they say about rate discrimination against the South?"

But beyond that is the realization within Mr. Gass's staff that some of their best young people may very well find their futures beyond car service work. One man's career at the AAR may be with another division entirely and involve phases of railroading completely apart from the CSD. Another's may be outside the AAR, possibly with a member road that needs his particular skills and training. Either way, the broad scope of this course is intended to provide each of the 20 young men with sound ballast whichever way he goes.

An example of this sweeping coverage of railroading was the lecture given at the second session of the seminar by Robert S. Henry, vice-presisdent, public relations, of the AAR.

The class ranged with Colonel Henry from cab to

caboose through such topics as manpower and management, railroads in receivership, different railroads' approaches to the same problems and the functions of the several departments of the association.

The Seminar Program

The format of the classes follows a simple pattern: disposition of business (time and topic for the next session, designations for program committees), introduction of the speaker, main lecture, a question-and-answer period and, often, a sort of summing-up by either Mr. Megee or Mr. Coughlin who apply the night's discourse to some aspect of car service work.

The programs are developed by the "students" themselves with arrangements for guest speakers usually made by Mr. Megee or Mr. Coughlin. The classes are held in the division offices after working hours. Two programs have been held thus far that departed greatly from what has been typical: once in a trip to the nearby Potomac Yards following a brief address by C. E. McCarty, yard manager, and, again, in the showing of a series of railroading films. The former was acclaimed as a big help to the class as a means to actually see going on much of what it had been discussing. The motion pictures, however, were not so highly regarded except as a change-of-pace or to supplement the regular lecture periods. Right now the student program committee is considering suggestions for future programs as the seminar goes into its second year.

In another class, Mr. Gass himself analyzed the work of the CSD following a brief review of its history. Again, he and Mr. Megee teamed up for a review of the 11 meetings held in 1954, hitting the highlights of each and clarifying any misconceptions that had developed.

R. G. May, AAR vice-president, Operations and Maintenance Department, drew the largest attendance at one of the classes with a lecture on the functions of his department. He also brought in descriptions of departmental and unit type operations and answered questions ranging from hot boxes to explosives. Other lectures were given by Mr. Coughlin; Mr. Megee; A. F. Swinburne, executive assistant to Mr. Gass; H. E. Springer, assistant to the chairman, Shippers Advisory Boards; R. E. Clark, manager, closed car section, CSD; aand W. E. Callahan, manager, open car section, CSD, each speaking on his own duties.

Minutes of the sessions are sent out to district managers and field agents, one of whom, on receipt of his first copy, offered to pay tuition for what he thought was a proposed correspondence course.

The seminar "student body" includes clerks and file clerks, department chiefs and departmental aides, statisticians and agents. But, as with its "curriculum," there is no attempt to limit seminar attendance to the division alone, or even to just AAR people, and outsiders have attended classes of special interest to them.

Actually, CSD officials point out, they are not alone in offering such a course. Several roads, they say, have correspondence courses or personal attendance classes on similar lines for car service personnel. Others provide instruction in proper car handling to local forces through transportation inspectors or car service supervisors working out of the offices of the roads' own chief transportation officers.

Benchmarks and Yardsticks

WHEN THE FATHERS of American independence sought to arouse resistance to political dictation from overseas, they did not portray themselves as merely being "agin" the king and his ministers. Instead, they were *for* something—the liberties which Englishmen had often fought for.

A similar positive attitude ought to be equally effective and appropriate in combating world Communism. There are a lot of things that most people who oppose Communism would gladly be *for*—but these positive aspects of anti-Communism are too seldom mentioned.

Most of the positive beliefs which induce men to benevolent and courageous behavior are those they derive directly or indirectly from religion—whether in one of its traditional forms or in some more individualized manifestation. For example, people will not risk their lives merely out of intellectual respect for the binomial theorem —nor will they consciously make sacrifices merely to defend the right of millionaires to hold on to their possessions, regardless of how acquired.

However, if a man has a deep conviction that he, and every other human being, is something much more than an animal—then he may be willing to undergo a lot of discomfort to defend his right to think, to figure, and to argue; and the right of other people to be free from persecution and to retain property honestly acquired.

Communism probably cannot be opposed with great effectiveness merely from the motive of a personal dislike of particular Communists. Really effective opposition must be based upon affirmative convictions—in a belief in something a great deal deeper than one's own immediate comfort and self-interest. If all that can be said in behalf of the American way of doing things is that we have more automobiles and washing machines than the Russians do—why is that any argument for a man to risk his life in defense of our system?

Actually, it is our freedom—derived and sustained primarily from our multifaceted religious heritage—that is worth making sacrifices to defend. Our standard of living is merely a byproduct.

People who pretend to defend our Western way of doing things, only by argument of our economic well-being are falling into a Marxist trap. They are accepting the "economic determinism" that Marx preached. If all we can offer in defense of our way of life is our desire to keep our ascendency in TV sets per family, then the people who are organizing to take these luxuries away from us are not acting from motives much different or more reprehensible than our own. The motives of most Americans are actually more respectable than one would conclude from a great deal that one reads in the papers. J.G.L.

LOADING AND SECURING Mobilvans is a one-man job with the Clark heavy-duty fork lift truck. Three containers can be loaded on a 53-ft flat car.

A "Piggyback" Cost Cutter

New Mobilvan system combines containers with fork lift trucks or straddle carriers to speed handling and reduce weight

The Clark Equipment Company, Battle Creek, Mich., has unveiled a new entry in the "piggyback" field—a Mobilvan system that can be used with either truck or rail transportation. The new system is designed to reduce handling costs, and cut dead weight by removal of ordinary trailer wheels and underframes.

The Clark system uses lightweight containers, called "Mobilvans," which can be handled by heavy-duty fork lift trucks and loaded three to a 53-ft flat car. Tie-down equipment is held to a minimum, and the company figures that $500 will modify an existing flat car for this service. The modification is such that cars could be used in regular revenue freight service when not moving Mobilvans.

For truck movement, the vans can be loaded two to a 35-ft flatbed trailer. Inside a city a single Mobilvan can be picked up or delivered by a short flatbed truck. The Clark company also considers its new Mobilvan an ideal "mobile warehouse," and believes shippers and receivers will use it for short term storage of quick turnover items.

R. H. Davies, vice-president of the equipment company, described the new system at a recent press conference in Battle Creek. The system was developed by John Bridge. Some of Mr. Bridge's ideas on moving "truck trailers without wheels" were described in *Railway Age*, August 9, 1954, page 59.

Mobilvan Measurements

The Clark container is 17 ft long, 8 ft wide and 8 ft high. It has doors at one end, like a standard trailer van. First models have been made of steel, but experiments are being made with plastic that will, according to Clark, cut the weight by one-third. Empty weight of the present vans is 3,000 lb, with nominal capacity of 20,000 lb. Clark estimates the vans would cost under $1,500 each in production.

At present, Clark plans to build 20 Mobilvans, ten steel and ten plastic, for field experiments. Mr. Davies told *Railway Age* that other experiments will be conducted on whether to build the vans so they can be "collapsed" for deadhead movement.

Plastic Mobilvans will be constructed from material provided by the Haskelite Manufacturing Corporation, Grand Rapids, Mich. These models will have walls of plywood, faced with Fiberglas cloth polyester laminate. Roofs will consist of Dow Chemical's Styrofoam faced with the Fiberglas cloth.

Two pieces of Clark equipment are capable of handling loaded Mobilvans, according to Mr. Davies. One is a 30,000-lb capacity fork lift truck, and the other a straddle carrier. These rubber-tired units require no special working space, and can operate over cinders or a similar surface. Either of the units will automatically uncouple the tie-down pins when unloading Mobilvans from a flat car or truck.

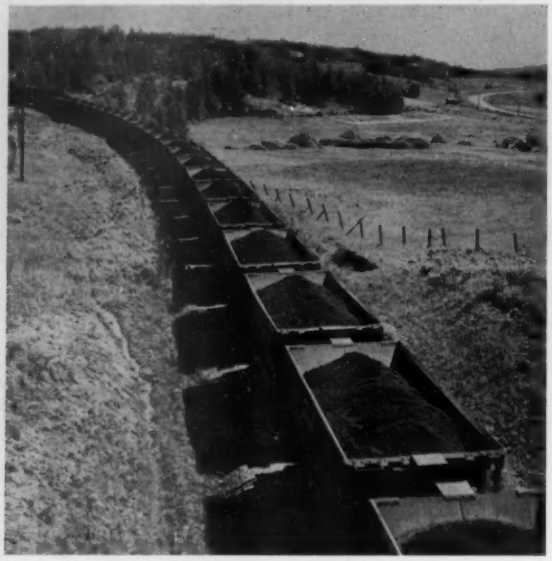
The "tie-down" device developed by Clark consists of a spring-operated pin that locks each Mobilvan in place as it is loaded. Since the pin is tripped by either the fork lift or the straddle carrier, one man can load and secure the vans. At the demonstration in Battle Creek, three containers were loaded on a flat car in slightly more than 6 minutes. Clark points to this saving in time and manpower as an advantage over conventional "piggyback" loading operations. In the latter, two or more men are required to secure the trailers on flat cars.

A reduction in loading time, by the use of side loading; the low cost of equipping flat cars; elimination of need for special loading docks; a possible reduction in switching moves, and less damage to lading because of fewer handlings—these are major benefits to be derived from the Mobilvan system, Mr. Davies declared. He said Clark wants to work out lease arrangements so the Mobilvans can be field tested by railroads.

Mr. Bridge said use of the Mobilvans for "piggyback" service would eliminate 6,000 lb of dead weight by removal of trailer wheels and underframe. Three feet of clearance would be saved, he added, and the space can be turned into paying "cube."

FROM MINE

IRON ORE is taken from this open pit mine near Atikokan and loaded into . . .



THESE SEVENTY-TON ORE CARS which are then assembled in eastbound . . .

Iron Ore Moves Faster

. . . because Canadian National bought more ore cars, extended dock, laid new rail, lengthened sidings, and installed centralized traffic control

To handle more traffic at higher average speed on a single track line, the Canadian National has laid new rail, extended sidings and installed new signalling on 141 miles of line from ore docks on Lake Superior, at Port Arthur, west to an ore mine at Atikokan, Ont. Two hundred new 70-ton ore cars were added to this operation in 1954, and the 600-ft four-track ore dock at Port Arthur is being extended 600 ft so more boats can be loaded at one time.

From Port Arthur double track extends 35.7 miles through Fort William to Conmee, then the road is single track 105 miles to Atikokan and on west to Winnipeg, 438 miles from Port Arthur. Transcontinental traffic is not routed on this line, but takes another Canadian National route about 250 miles north of Port Arthur.

Port Arthur and Fort William are the principal Canadian lakehead points at the west end of Lake Superior. Large quantities of grain, grown in the western prairie provinces, move eastbound through Winnipeg, and then over the line through Atikokan to Port Arthur. There the grain is placed in large terminal elevators to be loaded on lake vessels for movement east. This grain movement is at a peak from harvest time until the close of navigation. As soon as navigation opens in the spring, grain again is moved in large quantities eastbound through Port Arthur.

This line serves a large open-pit iron ore mine at Atikokan, 141 miles west of Port Arthur. Shipments from this mine move in ore cars to Port Arthur, where these cars are moved out onto a large ore dock, to be dumped into ships for movement eastward on the Great Lakes. Starting in the 1953 season of navigation, 1,301,364 long tons of this ore were handled from the Atikokan mine to the docks, and plans were made to handle increases to about 5,000,000 tons annually.

Up to 30 Trains Daily on Single Track

Farming country extends from Port Arthur about 35 miles, beyond which the terrain is so rough and rocky that there is no agriculture or industry except mining and cutting of pulp wood for paper mills. Port Arthur and Fort William have a combined population of 87,000. One time freight, on fast schedule, is operated each way daily between Winnipeg and Port Arthur, to handle meats, foods, manufactured products and merchandise. One passenger train, which makes stops at all towns, is operated each way daily, except Sunday. A local freight operates westbound two days each week, and eastbound two days. Extra trains are operated as required to handle grain and ore. As many as 30 trains are operated some days.

At Port Arthur the lake level is 603 ft above sea level and the tracks are at 608 ft elevation. From Port Arthur to Shabaqua the railroad, in general, follows up the valley of the Kaministiquia river, the maximum grade

HEAVY TONNAGE TRAINS which move by signal indication controlled by the dispatcher to . . .

PORT ARTHUR DOCKS where the ore is dumped into lake boats.

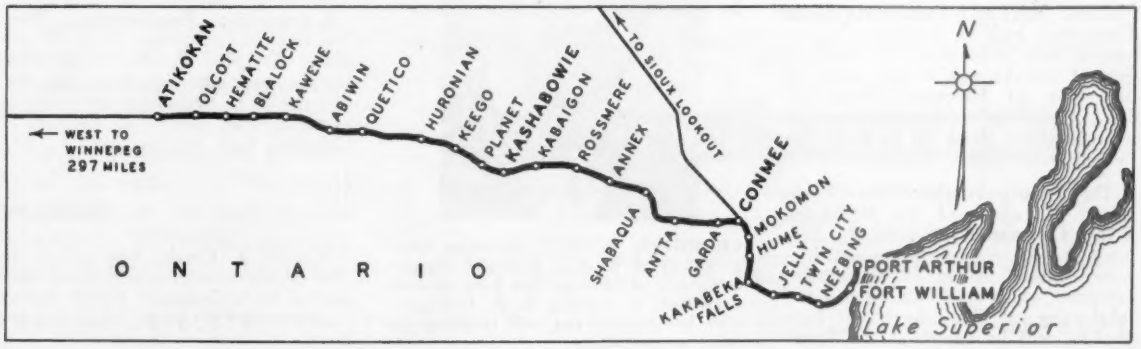
being about 1.08 per cent. From Shabaqua the ascending grade is about 1.18 per cent for 4 miles to MP 57.1 from which the grade continues to ascend at a maximum of 0.96 per cent for 2 miles to Annex, with practically level grade 37 miles on to Huronian, whence the grade descends to Atikokan. Thus, for the eastward movement of grain and ore, the grade is acending at 0.70 per cent compensated for 45 miles from Atikokan to Huronian; level for 39 miles to Annex, and then down grade 60 miles to Port Arthur.

Much of this section of railroad is on curves, there being 300 curves in the 105 miles; many range over 5 or 6 degrees, some are 8-degree and one 9-degree. At 13 locations the speed is restricted to 30 mph for freight trains. Maximum authorized speed is 45 mph for passenger trains and 35 for freights, except for 27 miles between Conmee and Neebing yard where the limits are 55 and 45 respectively. Trains handling ore are limited to 25 mph all the way between Atikokan and Port Arthur.

Ordinarily, westbound freights are handled by diesel locomotives rated 3,300 tons as far as Annex, and 5,800 tons on to Atikokan; or 6,400 tons eastward from Atikokan to Huronian, and 9,620 tons from Huronian to Port Arthur. The two time freight merchandise trains, one each way daily, are handled by diesel locomotives, and make the run, either way between Neebing yard and Atikokan in about 4½ hours.

Loaded cars of ore are usually moved in solid trains or with cars of grain. Previous to the use of diesel locomotives, a crew would take enough loaded cars to fill the locomotive tonnage rating from Atikokan up the grade 45 miles to Huronian, where these cars were set out, while the crew went back to Atikokan to get more loaded cars, and take these, with those set out at Huronian, to Port Arthur. That would be about 9,500 tons which the locomotive can easily handle on the descending grade, all the way. Since diesel locomotives have been placed in service these turnarounds have been eliminated. Empties are hauled from Neebing yard to Annex and these are used as fill outs for trains to Atikokan.

Because of the speed restrictions, due to curves, grades



and the 25-mph limit for ore trains, the average speed of trains in motion is relatively low. Another handicap is that when traffic is at normal summer volume, as many as 19 meets are made on the single track in an 8-hour shift. Previously when operating by timetable and train orders, with hand-thrown siding switches, much time was lost in getting in and out of sidings and waiting for meets. Now with CTC, the siding switches are operated by machines, and these machines with signals for authorizing train movements are under the control of the dispatcher. Meets are so close that in some instances neither train stops. Thus the average speed has been increased close to that governed by the curves, grades and other factors. In short, the capacity of the line has been increased to meet the requirements imposed by increased traffic.

Some Sidings Extended, Others Removed

As part of the improvement program, 15 sidings were lengthened to accommodate 114 to 120 cars, with a 127-car siding at Kawene, and a 150-car siding at Annex. These numbers are in terms of 45-ft cars, whereas the ore cars are only 24 ft long. Thus, a 115-car siding will hold 240 ore cars. When lengthening the sidings and laying new 115-lb rail on the main track, new No. 12 turnouts were installed at the ends of the 17 long sidings at which power switches and signals were installed as part of the CTC.

Some of the previous short sidings, such as the one at Owakonze, MP 101, were removed. Other short sidings, such as the one at Shebandowan, were left in place for use of work equipment cars. These switches, as well as other main track switches leading to spurs, were equipped with electric locks as part of the CTC.

The 35 miles of double track from Port Arthur west ends at Conmee, where the Graham line branches off to the north, extending 160 miles to connect at Sioux Lookout with the direct transcontinental line of the Canadian National. The layout at the end of double track at Conmee includes two crossovers, operated by three power switches and one spring switch, all of which, including signals, are in the CTC system.

About 1 mile west of the station at Port Arthur, the Canadian National main track is crossed by the main tracks of the Canadian Pacific, this crossing previously having been protected by a 34-lever mechanical interlocking. As part of the improvement program, this interlocker was replaced by power switches and signals, all of which are included in the CTC system. This crossing layout includes, on the Canadian National, two switches leading to a yard, and a switch at the end of double track; and, on the Canadian Pacific, a crossover between main tracks, and a switch leading to a yard. Thus, a total of six power switches and home signals are included. The new automatic block signaling on the double track between Port Arthur and Conmee, 34.2 miles, is for single-direction, right-hand running.

This new signaling was planned and installed by Canadian National forces. The major items of signal equipment were furnished by the General Railway Signal Company.

Supply Trade

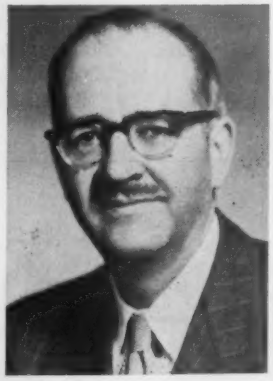
Allen A. Crone, superintendent of the Lackawanna, N.Y., plant of **Buffalo Brake Beam Company,** has been made research and development consultant, and has been succeeded by **Clyde W. Smith,** formerly superintendent of the die division of **C. L. Gugler Machine Company.**

L. E. Hassman, who has represented **Q&C Co.** in St. Louis and southwestern territories has retired. **H. J. Tierney Supply Company,** 1911 Railway Exchange building, St. Louis, now represents Q&C in those territories.

Preco, Inc., has acquired **Electra Motors, Inc.,** and **California Gear Company,** both of Anaheim, Cal., as another step in its expansion program. Several months ago it also acquired ownership of **Electron Products, Inc.,** Los Angeles, manufacturers of capacitors and filters for the electronic industry.

The **Transportation Filter Company,** Chicago, and the **Hillsboro Filter Company,** Hillsboro, Ill., have merged. All manufacturing activities were consolidated at Hillsboro. The company, which manufactures fuel and lubricating oil filters for diesel locomotives, will be known as the Transportation Filter Company, with general offices at 80 E. Jackson boulevard, Chicago.

John H. Van Moss, formerly western sales manager of **ACF Industries, Inc.,** at Chicago, who, at the request of ACF, remained two years beyond normal retirement age as a sales consultant for western territory, has retired. He is now associated with his son, **John H. Van Moss, Jr.,** railway supply sales representative at Chicago.



GEORGE L. HUDSON, executive vice-president of Western Railroad Supply Company, at Chicago, has been elected president, succeeding S. E. Gillespie, who has retired but will continue to serve as consultant.

Charles T. Everett has been elected president, general manager and a director of **Beaver Pipe Tools, Inc.** He joined the company in May 1954 as executive vice-president and general manager.

Baldwin-Lima-Hamilton Corporation has acquired ownership of the **Erwin Loewy Hydropress** interests, as part of its diversification program.

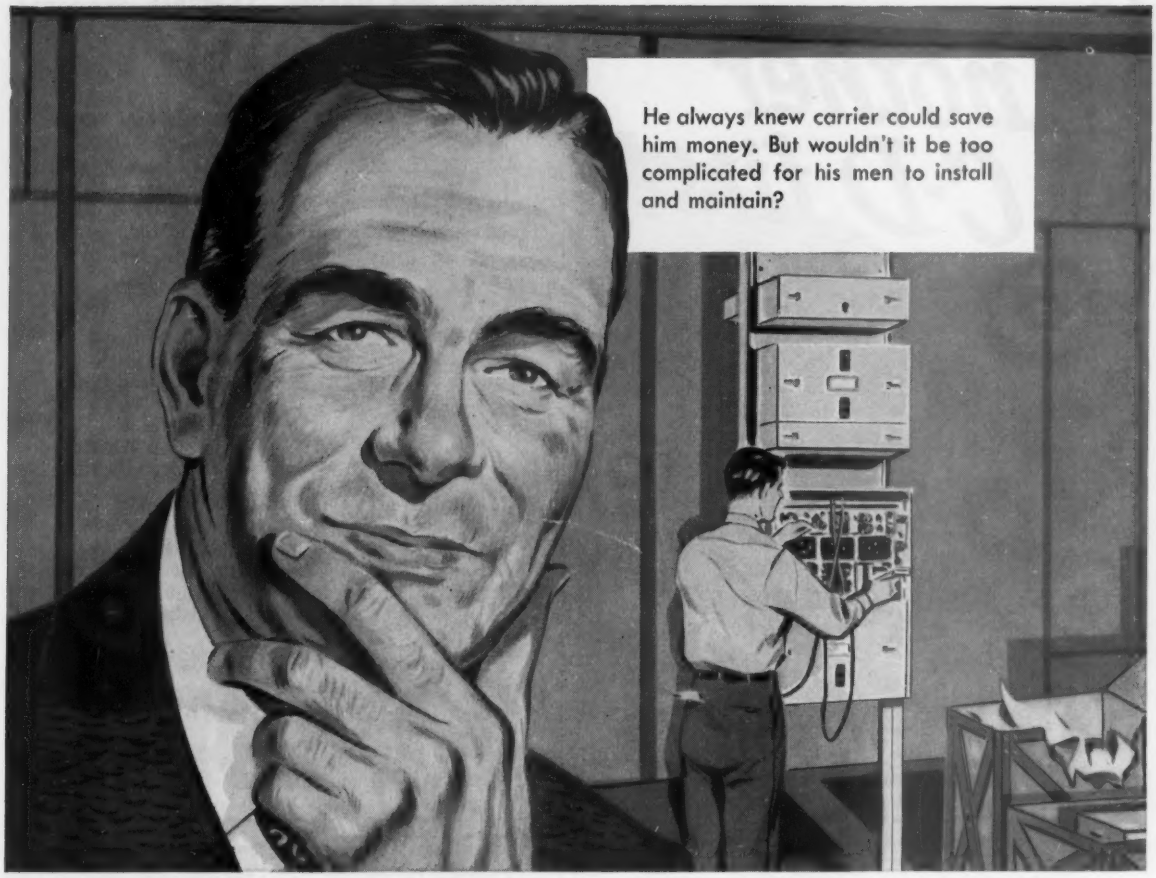
The **Okonite Company** has moved its San Francisco sales office to 701 Phelps street, consolidating it with warehouse operations in new and enlarged quarters.

Combustion Engineering, Inc., has changed the name of its Superheater Company Division to Railroad Division, with offices in New York and Chicago. **S. L. Brownlee** will continue as manager of sales of the division, at Chicago.

OBITUARY

Joseph J. Cizek, who retired in 1941 as vice-president and sales manager of Leslie Company, died at Martin County Hospital, Stuart, Fla., January 29.

(Additional news appears on page 60)



And he thought carrier would be complicated!

He has just installed his first Lenkurt carrier. Now he knows how easy it is to enjoy carrier's economies!

Like many other communications men, he had been putting off buying carrier—simply because it was unfamiliar "electronic" equipment. Then he heard about our "Follow-Thru" Engineering Service, and asked us for detailed recommendations. Following these recommendations, he selected a short-haul Type 33A System.

Rack-assembled and system-tested, his equipment was ready for installation on delivery. His men simply followed complete, clearly illustrated, easy-to-understand instructions. After uncrating the carrier rack, they bolted it to the floor—hooked up line, voice termination, power, and ground connections—and cut it in. Installation was simple as *that!* And similarly simple instructions will make it easy for his men to keep Lenkurt carrier in regular service.

Service as long as you want it! Each step of the way—at installation or at any time during the life of the equipment—we stand ready to assure that your Lenkurt System will work *right!* You can expect—and you will *get*—years of completely satisfactory operation from Type 33A Carrier with no more than routine maintenance.

Why not write now and learn the easy way—the Lenkurt way—to real savings through carrier?

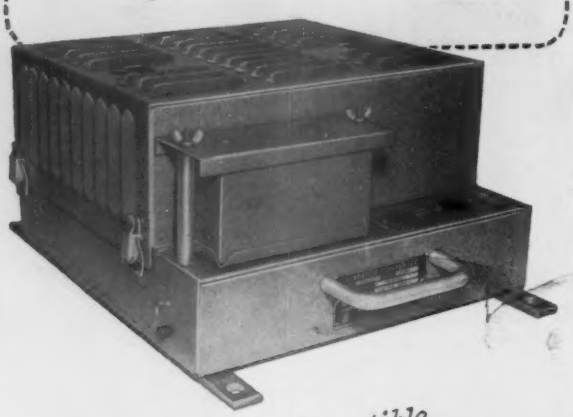
AUTOMATIC ELECTRIC

Makers of Telephone, Signaling and Communication Apparatus . . . Electrical Engineers, Designers and Consultants

Distributor in U.S. and Possessions:
Automatic Electric Sales Corporation . . . 1033 West Van Buren Street, Chicago 7, U.S.A.
In Canada: Automatic Electric Sales (Canada) Limited, 185 Bartley Drive, Toronto 16, Ontario
Export Distributors: International Automatic Electric Corporation, Chicago

AUTOMATIC ELECTRIC—LEADERS IN CARRIER COMMUNICATION—**LENKURT**

Another C-D first



A New Low-Cost Convertible R.R. Converter

Yes, it's a new Cornell-Dubilier idea. Install the *single vibrator* economy Model 3600 converter *now* and convert to a *dual vibrator*, automatic switchover unit at any future time. Change over in a few seconds without tools.

Same rugged dependability as the nationally famous "3200 Series C-D RR Converter" but priced for low cost initial (single vibrator) installation. 50% longer vibrator life expectancy.

Write for Bulletin EB-3600, Cornell-Dubilier Electric Corp., Dept. RA25W, Indianapolis Division, 2900 Columbia Ave., Indianapolis, Indiana. Affiliated Member A.A.R.

CONVERSION KIT

Consists of Standby Vibrator and automatic Switch. Can be purchased whenever you're ready for dual vibrator service.

INSTANT ACCESSIBILITY

Trunk hasps afford quick access for conversion. Either RACK or BULKHEAD mounting, as ordered.

PLUG-IN CONVERSION

Field changeover like a vacuum tube. Kit can be plugged-in in minutes without tools.

COMPLETE UNIT

Available initially for dual vibrator operation factory equipped with automatic changeover feature.

CONSISTENTLY DEPENDABLE

CORNELL-DUBILIER

VIBRATOR CONVERTERS

For Industrial—Marine—Railroad and Appliance Services

PLANTS IN SO. PLAINFIELD, N. J.; NEW BEDFORD, WORCESTER & CAMBRIDGE, MASS.; PROVIDENCE & HOPE VALLEY, R. I.; INDIANAPOLIS, IND.; FUQUAY SPRINGS & SANFORD, N. C.; SUBSIDIARY: RADIART CORP. CLEVELAND, O.

Service and Quality—Flintkote Products for RAILROADS

PROTECTIVE COATINGS
- Asphalt Emulsions
- Asphalt Cutbacks
- Car Cements (Spray, Brush and Trowel Types)

SPECIALTIES
- Aluminum Asphalt Paint
- Insulation Coatings
- Industrial Adhesives
- Sound Deadening Materials
- Products for Waterproofing and Dampproofing

FLOORING MATERIALS
- Asphalt Mastic
- Latex Mastic (Underlayments and Finish Flooring)
- Tile Cements
- Anti-slip Coating

BUILDING MATERIALS
- Roll Roofing
- Roof Coatings
- Asphalt Shingles and Siding
- Asbestos-Cement Shingles and Siding
- Insulation Wallboard, Tile and Plank

Call or Write for Complete Information

THE FLINTKOTE COMPANY, *Industrial Products Division,* 30 Rockefeller Plaza, New York 20, N. Y.
Boston • Chicago Heights • Detroit • Los Angeles
New Orleans • Philadelphia

In Toronto, Ontario:
The Flintkote Company of Canada, Ltd.

In London, England:
Industrial Asphalts Company, Ltd.

FLINTKOTE

Lewis sealtite hook bolt

ALL PRODUCTS ARE MANUFACTURED IN THE U.S.A. TO A.S.T.M. SPECIFICATIONS

A highly dependable, superior bolt used in bridge and trestle construction. Forged from S.A.E. 1045 steel. Patented fins prevent turning. Sealtite washer nut adds strength, stops seepage. *Available in Hot-Dip Galvanized finish for greater durability and economy.*

Used by 85% of America's Class I Railroads.

Also available with std. sq. and hex. nuts.

See your Lewis representative, or contact factory for samples, prices, full details.

Lewis BOLT & NUT COMPANY
504 Malcolm Ave. S. E.
MINNEAPOLIS 14, MINNESOTA

LOOK FOR THIS STAMP OF U QUALITY

Westinghouse
Friction Draft Gear
Type NY-11-F
Certified A.A.R.

Friction does it

...and does it well!

Effectively . . . the Westinghouse Friction Draft Gear puts friction to work. For the *smooth start* of a freight train, there is a soft initial action. Then when the BIG impact comes, the Westinghouse Gear is ready instantly with its HIGH shock-absorbing capacity. The initial action blends smoothly into a high ultimate frictional resistance.

In other words, the shock is absorbed by friction before it reaches the car and lading. Thereby, Westinghouse Friction Draft Gear cuts lading damage to a minimum; constantly stands guard against unnecessary rolling stock maintenance costs. Continuing research and development *keep* the Westinghouse Gear practical and economical...as well as effective!

Cardwell Westinghouse Co.
332 S. Michigan Ave., Chicago 4, Illinois
Canadian Cardwell Co. Ltd., Montreal

Specify
CARDWELL
WESTINGHOUSE

Railway Officers

BELT RAILWAY OF CHICAGO —CHICAGO & WESTERN INDIANA.—C. L. Harris, assistant valuation engineer, has been appointed valuation engineer, succeeding **A. L. Atwill,** who has retired after 41 years of service. **Leland W. Howard** has been named assistant land and tax commissioner.

R. H. Wendell has been appointed assistant manager of personnel. The office of manager of personnel is now located at Dearborn Station, Chicago 5.

CHESAPEAKE & OHIO.—Wayne C. Fletcher, industrial commissioner at Huntington, W. Va., has been appointed assistant general industrial commissioner there.

E. T. Rucker, superintendent of the Huntington division, has been appointed assistant to vice-president—construction and maintenance, at Huntington, W. Va. **Harry Kindt,** superintendent of the Ashland division, succeeds Mr. Rucker at Huntington. The Ashland division is being consolidated with the Russell division, and **O. W. Draper,** superintendent of the latter, has been named superintendent of the new Ashland-Russell division.

C. C. Bozarth, communications engineer; **E. M. Hastings, Jr.,** wire crossing engineer; **B. Spencer,** general supervisor communications maintenance, and **E. D. Spiggle,** general communications inspector, all at Richmond, Va., now are responsible for communications matters over the entire system.

A. M. Weeks, engineer signal construction and general signal inspector, has been named system engineer signal construction and maintenance at Huntington. **C. W. Hoffman,** general signal inspector at Detroit, has been appointed system assistant general signal inspector. Their former positions have been abolished. **E. A. Burgin,** signal engineer, and **R. H. Behymer,** general signal inspector, both on the Southern region at Richmond, have had their duties extended to a system-wide basis. **R. W. Margsh,** assistant signal engineer at Detroit, and **R. E. Clark,** supervisor signal construction at Huntington, also have system-wide duties henceforth.

S. H. Pulliam, general superintendent—personnel at Cleveland, Ohio, has been appointed assistant to vice-president and will be temporarily attached to the office of the vice-president—operations at Richmond while making a comprehensive study of the C&O's less-than-carload-lots methods.

Ralph D. Griebling, assistant to secretary of the C&O, has been named assistant secretary, with headquarters as before at Cleveland.

L. F. Hager, agent—operator at Logan, W. Va., has been appointed general agent at Huntington, W. Va.

NICKEL PLATE.—Ralph R. Deahl, freight traffic manager at Chicago, has been appointed assistant to president at Cleveland, Ohio, effective March 1. Mr. Deahl will assume the duties of the late H. J. McDonald, vice-president and assistant to president (*Railway Age*, February 7).

CHICAGO & EASTERN ILLINOIS.—L. O. Willhite, industrial agent at Chicago, retired January 31 after 43 years of service.

CHICAGO & NORTH WESTERN. —A. J. Weger, manager of mail, baggage and express department at Chicago, has retired after nearly 42 years of service. His successor is **N. N. Cedarleaf,** assistant superintendent of merchandise and highway operations.

Howard J. Gramlich, director of agricultural development at Chicago, has retired. His duties have been assumed by **Kenneth W. Huxhold,** who has been named agricultural agent at Chicago.

COTTON BELT. — J. F. McCurdy, division engineer at Pine Bluff, Ark., retired January 1, after 45 years of service. Mr. McCurdy's successor is **D. H. Jenkins,** bridges and building supervisor, who in turn has been replaced by **R. H. Patterson,** assistant bridges and building supervisor.

DELAWARE & HUDSON. — Henry J. Langlois, division engineer, Champlain division, at Plattsburg, N.Y., retired January 31, after 37 years of service. The jurisdiction of **E. E. Crowley,** division engineer, Saratoga division, at Albany, N.Y., has been extended to include the Champlain division; the divisional engineering organization at Plattsburg has been abolished.

James P. McAvoy, office engineer at Albany, retired February 1, after 38 years of service.

LACKAWANNA. — E. C. Ennis, general freight agent at Buffalo, has been appointed foreign freight traffic manager at New York, succeeding **W. H. Browne,** deceased. **H. E. Simpson,** general agent at Kansas City, succeeds Mr. Ennis as general freight agent at Buffalo and is replaced by **J. H. Williams,** general agent at Houston. **J. H. Cliff** has been named general agent at Houston, succeeding Mr. Williams.

MINNEAPOLIS & ST. LOUIS.— C. Dale Ruffcorn, Jr., commercial agent, and **Armand W. Reeder,** traffic agent, have been appointed general agents at Minneapolis and St. Louis, respectively. **Gerald J. Hunt,** traveling agent at Kansas City, Mo., has been promoted to general agent at Birmingham, Ala., succeeding **Richmond D. Luce,** resigned.

MORRISSEY, FERNIE & MICHEL.—H. H. Gardner has been appointed general manager at Fernie, B.C., succeeding **T. H. Wilson.**

NEW HAVEN. — Edward V. Murphy, general freight traffic manager at Boston, has been appointed assistant vice-president—freight traffic, with the same headquarters. Born at

LOUISVILLE & NASHVILLE.—J. T. Metcalf, general attorney, who has been appointed general solicitor at Louisville (*Railway Age*, January 31, page 36).

SEABOARD.—H. G. Walker, who has been named assistant to vice-president in charge of freight traffic at Norfolk, Va., as reported in *Railway Age* February 14.

All Together...Now

352,359

CAR SETS OF BARBER TRUCKS HAVE BEEN SOLD

OVER 30,288

CAR SETS SOLD

IN JUST THE

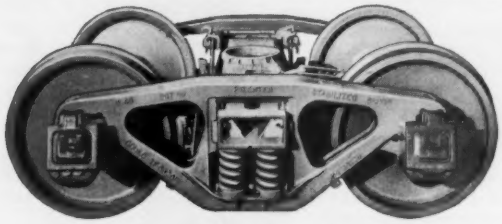
LAST 33 MONTHS

Barber is grateful. The mechanical and purchasing men of more than 100 major railroads and private car lines have specified and bought 352,359 car sets of Barber Stabilized Trucks in the United States and Canada, since their introduction. Also, hundreds of car men have helped tremendously, passing along their preferences for the Barber Truck. They like its extremely simple dismantling, servicing and assembling which saves so much time and money.

In just 33 months (January 1, 1952 through September 30, 1954) Barber has sold 30,288 car sets in the United States alone, to *continue* their leadership in the Stabilized Truck field.

For smooth-riding freight cars, satisfaction in every department . . . specify Barber! Standard Car Truck Company, 332 S. Michigan Ave., Chicago 4, Illinois. *In Canada:* Consolidated Equipment Co., Ltd., Dominion Square Bldg., Montreal 2.

Specify Smoother-Riding



BARBER

STABILIZED TRUCKS

Fall River, Mass., Mr. Murphy joined the New Haven as a clerk at Fall River in 1913. He has held various positions in the operating and traffic departments, including general agent, western traffic manager and general freight sales manager. He became general freight traffic manager in August 1950.

Harold W. Jenkins, assistant to chief engineer at Boston, has been ap-

Edward V. Murphy

Harold W. Jenkins

Albert E. Cawood

pointed assistant chief engineer; **Albert E. Cawood,** assistant bridge engineer at New Haven, has been named engineer of structures; **William H.**

William H. Haggerty

Haggerty, roadmaster at New Haven, has been appointed engineer of track; and **John R. Kenyon,** bridge and building supervisor, has been named general bridge and building supervisor. All these appointments were effective as of November 1, 1954.

NEW YORK CENTRAL.—Robert D. Brooks, general attorney — commerce, has been promoted to the new position of general solicitor in charge of commerce law work at New York. **John H. Colgren** and **Kenneth H. Lundmark** have been named assistant general solicitors.

NORTHERN PACIFIC. — P. A. Stutz has been appointed car accountant at St. Paul, succeeding **Bernard Ryan,** who has retired after 49 years of service.

PULLMAN COMPANY.—John R. Ruggeri, assistant chief purchasing

John R. Ruggeri

and stores officer, has been appointed chief purchasing and stores officer at Chicago.

RAILWAY EXPRESS AGENCY. —Robert C. Hendon, vice-president —personnel, has been appointed vice-president—operations. **John N. Meisten,** director, labor relations, succeeds Mr. Hendon as vice-president—personnel. **Alfred F. Hall,** director, personnel administration, has been named director, labor relations. **Peter C. Krist,** director, salary administration, has been appointed director, personnel and salary administration. All will continue to have headquarters in New York. A photograph of Mr. Meisten was published in *Railway Age* December 21, 1953, page 16.

John A. Dill, general attorney, retired January 31 after more than 51 years in the express industry.

TEXAS & NEW ORLEANS. — Bernard S. Sines, vice-president at Houston, Tex., has been elected executive vice-president, succeeding the late **E. A. Craft.** Following graduation from Cornell University, Mr. Sines worked briefly for the Illinois Central and joined the Southern Pacific in 1925 as assistant engineer at El Paso.

Bernard S. Sines

He later served in the operating department and as executive representative at Guadalajara, Mexico, on SP Lines in Mexico. He became their president in 1948, retaining that position until 1951, when they were sold to the Mexican government. In April 1952 he was appointed vice-president of the T&NO at Houston.

OBITUARY

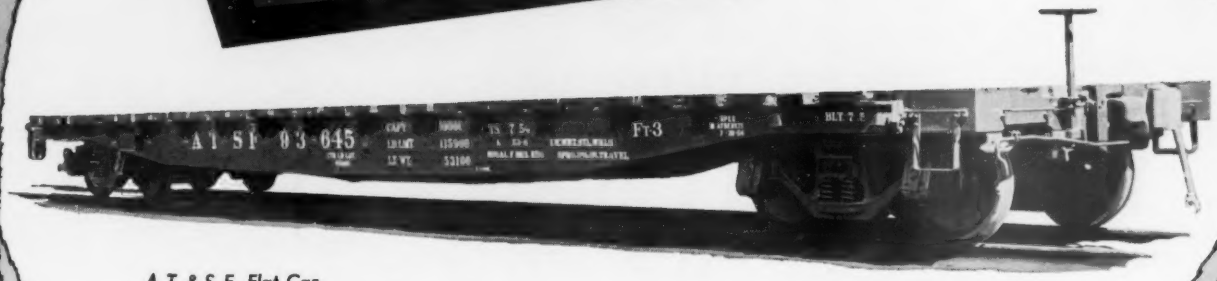
James R. Downes, 71, who retired in October 1953 as vice-president—assistant to president of the **Pennsylvania,** died February 15 at his home, the Rittenhouse Claridge, Philadelphia, after a long illness.

Harry W. Eagle, 62, general agent, steamship passenger traffic department, **Canadian Pacific** at Chicago, died at Banff, Alta., February 14.

Hugh Wright Stanley, 81, retired president of the **Tennessee Central,** died recently at Nashville, Tenn.

Charles R. Ross, 75, who retired in 1950 as supervisor of operating expenditures of the **Pennsylvania,** died February 13 in Bryn Mawr hospital, Philadelphia.

Here's Long Life!



A.T. & S.F. Flat Car
53' 6" long—50-ton capacity

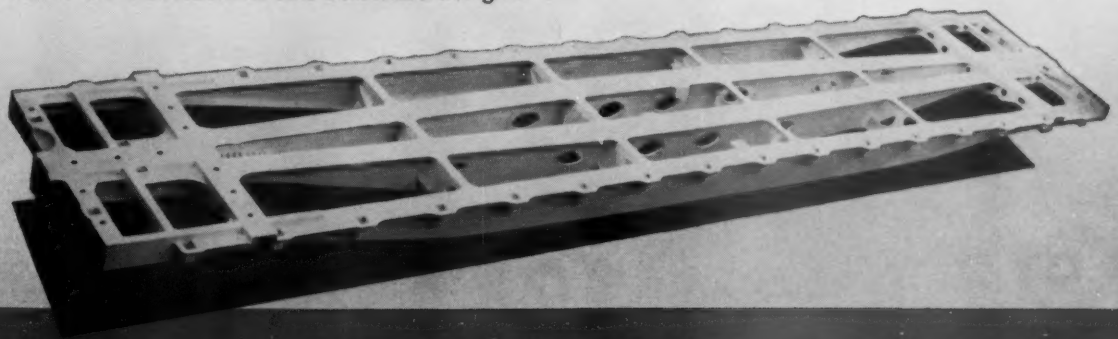
New Santa Fe Flat Cars With One-Piece Underframes are

BUILT TO LAST!

Modern railroading is particularly tough on freight cars and flat cars are often called the workhorse on rails. The backbone and foundation of the flat car is the underframe. COMMONWEALTH One-Piece Cast Steel Underframes combine great strength with minimum weight and provide *maintenance free* performance.

Other advantages of COMMONWEALTH Underframes include unusually strong draft sills, draft gear pockets, striking castings and bolsters — flared center sills and wide top members providing better support for decking and loads — cast steel assures highest resistance to corrosion.

Thousands of flat cars with COMMONWEALTH Cast Steel Underframes — in service for years — prove these facts. Build *your* flat cars to last longer. Specify COMMONWEALTH Underframes. Write for information and standard designs.

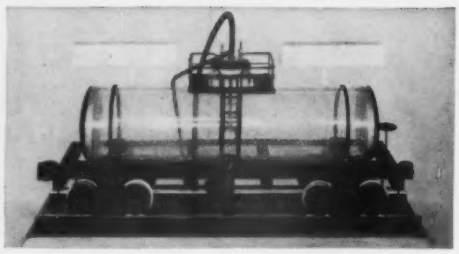


One-Piece Cast Steel Underframe

GENERAL STEEL CASTINGS

Granite City, Ill. Eddystone, Pa.

NEW OAKITE FOGGING UNIT slashes hours off tank car cleaning time



Model Tank Car

Transparent body of this model tank car gives you a pretty good idea of how the Oakite Fogging Unit operates. Here it is shown, in position, reaching every inch of soiled surface with a detergent-saturated steam fog. Soils quickly loosen, oils melt. Grime slides to tank car bottom for easy drain off.

Railroad men tell us—this new OAKITE FOGGING UNIT has manual cleaning of tank car interiors "beat a mile". They say it saves money. It should—it's a *mechanical* method. Does away with costly hand scraping and wiping. Speeds tank car turnaround. Removes moderate soils and oils in a fraction of the time required by old fashioned "muscle" methods. Unit is simple to install and maintain. It's light and easy to handle, and it's economical to operate.

The OAKITE FOGGING UNIT consists of two opposing spray nozzles mounted at the business end of a 4½ foot twin tube assembly. It is inserted into tank car through dome. Its 18 inch diameter dome plate is secured by clamps. Steam and suitable Oakite Cleaner are fed to nozzles. With steam and solution valves open and car drains closed, nozzles "let go" with a detergent-saturated steam fog. This fog blankets every inch of soiled surface. Soils lose their grip, oils melt and residues slide to tank car bottom. High pressure rinse with Unit completes the job.

The OAKITE FOGGING UNIT may be rented at a nominal fee to users of Oakite Cleaning Compounds. For particulars drop a line to Oakite Products, Inc., 46 Rector St., New York 6, N. Y.

OAKITE PRODUCTS, INC., 46 Rector Street, NEW YORK 6, N. Y.
In Canada: Oakite Products of Canada, Ltd. 65 Front St. East, Toronto, Ont.

OAKITE

RAILWAY DIVISION

Get the inside story on jacks

AND MORE EFFICIENT, LOWER COST LIFTING!

The new booklet you see here should—and can be—on *your* desk. It tells the story of a *most efficient and practical means for removal of wheels and trucks.* Read from its pages how Whiting Electric Portable Jacks are built stronger, safer and more powerful to lift higher, quicker, easier at the lowest possible cost... and with synchronous movement. Have this, and other valuable information at your fingertips. Send for this free booklet today!

CONTAINS

Complete construction information including jack clearance diagram • size range plus data on extra high capacity models • list of operational advantages and related cost cutting benefits • photographs of Whiting Jacks in use at various railroad repair shops • list of railroads using Whiting Jacks • valuable data on lifting beams as used with Whiting Jacks.

mail coupon now!

WHITING CORPORATION
15603 Lathrop Avenue, Harvey, Illinois
Send new Whiting Jack Bulletin No. PJC-403

Firm Name

Attention

Address

City Zone State

Freight Operating Statistics of Large Steam Railways—Selected Items

Region, Road and Year	Miles of road operated	Locomotive-Miles: Train-miles	Locomotive-Miles: Principal and helper	Locomotive-Miles: Light	Car-Miles: Loaded (thousands)	Car-Miles: Per cent loaded	Ton-miles (thousands): Gross excl. locos. & tenders	Ton-miles (thousands): Net rev. and non-rev.	Road-locos. on line: Serviceable: Unstored	Road-locos. on line: Serviceable: Stored	Road-locos. on line: B.O.	Road-locos. on line: per cent B.O.
New Eng. Region												
Boston & Maine....1954	1,627	245,049	249,385	8,434	8,676	65.3	571,797	232,971	72	1	5	6.4
1953	1,668	245,441	249,973	8,656	9,169	66.8	591,062	240,277	74	1	6	7.4
N. Y., N. H. & Hfd....1954	1,746	249,352	249,422	18,241	10,853	68.6	663,537	274,171	90	..	4	4.3
1953	1,748	294,593	294,653	18,657	11,713	69.3	720,388	304,509	90	..	8	8.2
Great Lake Region												
Delaware & Hudson....1954	793	186,232	191,958	10,123	8,913	65.4	630,101	319,502	39	..	6	13.3
1953	793	193,579	198,332	9,567	8,954	70.5	612,128	318,855	42	..	2	4.5
Del., Lack. & Western....1954	962	258,141	272,403	19,967	11,677	65.5	766,077	331,185	62	..	2	3.1
1953	962	264,315	277,832	21,303	11,641	66.9	760,668	333,376	65	..	1	1.5
Erie....1954	2,225	541,050	544,413	17,447	30,532	67.4	1,880,863	733,193	160	..	4	2.4
1953	2,235	568,115	571,707	23,820	32,870	69.1	1,939,140	763,163	167	..	2	1.2
Grand Trunk Western....1954	952	228,986	235,447	1,720	7,659	60.6	544,211	220,191	55	9	16	20.0
1953	952	225,193	233,052	1,549	7,445	60.2	521,621	214,579	62	9	9	11.3
Lehigh Valley....1954	1,150	207,028	210,667	6,846	10,223	65.1	697,838	314,568	31	2	1	2.9
1953	1,151	220,923	225,056	7,532	10,611	65.9	715,907	323,156	33	..	1	2.9
New York Central....1954	10,663	2,280,111	2,304,945	76,510	92,159	59.0	6,763,236	2,958,534	524	182	92	11.5
1953	10,667	2,498,627	2,555,532	98,661	96,085	58.1	7,083,796	3,055,596	680	50	129	15.0
New York, Chic. & St. L....1954	2,161	694,774	716,899	6,470	27,425	63.6	1,929,607	860,321	147	27	47	21.3
1953	2,161	721,367	745,019	7,555	27,722	62.5	1,976,541	865,934	196	20	36	14.3
Pitts. & Lake Erie....1954	221	51,922	51,922	....	2,339	64.0	204,798	124,568	18	7	..	..
1953	221	63,758	65,994	20	2,656	59.9	231,000	133,457	17	11	7	20.0
Wabash....1954	2,381	510,602	510,957	7,203	22,718	65.2	1,474,942	565,618	103	..	..	..
1953	2,381	522,999	523,649	6,960	22,233	64.9	1,453,208	566,576	109	10	25	17.4
Central Eastern Region												
Baltimore & Ohio....1954	6,077	1,428,153	1,562,350	143,702	57,009	61.2	4,369,699	2,075,434	422	43	109	19.0
1953	6,081	1,528,216	1,680,315	164,445	62,333	59.4	4,646,242	2,192,046	494	40	123	18.7
Bessemer & Lake Erie....1954	209	31,975	32,892	82	1,354	65.5	140,433	88,036	10	5	..	..
1953	209	51,244	54,997	241	2,567	60.5	302,653	195,376	18	10	3	9.7
Central RR Co. of New Jersey..1954	613	123,582	124,343	5,753	4,487	64.3	345,575	178,766	59	2	5	7.6
1953	615	121,139	124,982	8,466	4,726	67.0	347,827	182,736	65	6	6	7.8
Chicago & Eastern Ill....1954	868	123,666	123,666	2,879	5,760	65.4	358,047	195,930	27	..	2	6.9
1953	868	117,769	117,769	2,414	4,662	64.8	320,891	152,538	24	..	4	14.3
Elgin, Joliet & Eastern....1954	236	73,623	73,888	....	2,314	61.8	187,945	100,387	34	7	2	4.7
1953	236	93,500	93,767	....	2,886	62.3	232,784	123,484	36	4	1	2.4
Pennsylvania System....1954	9,906	2,629,989	2,810,854	199,065	113,084	64.2	8,114,269	3,774,822	733	267	401	28.6
1953	9,937	2,889,576	3,103,156	252,217	115,284	62.2	8,504,213	3,971,078	975	218	317	21.0
Reading....1954	1,304	314,576	319,437	12,132	11,543	61.0	971,595	507,493	158	21	24	11.8
1953	1,308	342,125	347,546	17,093	13,204	62.4	1,045,672	544,022	171	31	27	11.8
Western Maryland....1954	852	154,238	158,802	7,239	5,840	63.2	483,993	269,493	37	11	1	2.0
1953	837	176,231	192,460	14,207	6,474	60.6	549,265	303,677	92	16	4	3.6
Pocahontas Region												
Chesapeake & Ohio....1954	5,063	1,257,174	1,274,738	34,662	51,147	55.4	4,421,061	2,399,518	320	51	195	34.4
1953	5,034	1,195,265	1,219,599	32,463	49,681	55.6	4,296,714	2,320,974	401	52	149	24.8
Norfolk & Western....1954	2,110	629,896	671,754	56,495	29,769	57.5	2,754,381	1,487,244	212	29	33	12.0
1953	2,113	619,985	654,043	44,635	28,096	57.8	2,525,310	1,344,377	224	27	23	8.4
Southern Region												
Atlantic Coast Line....1954	5,340	759,718	759,724	8,483	22,765	57.1	1,702,250	759,681	237	..	8	3.3
1953	5,367	734,036	734,036	8,562	23,552	59.7	1,704,938	770,006	240	..	5	2.0
Central of Georgia....1954	1,731	187,541	187,566	2,480	7,327	66.8	506,344	239,813	70	..	2	2.8
1953	1,754	197,398	197,429	2,308	7,184	65.9	495,116	228,064	70	..	1	1.4
Gulf, Mobile & Ohio....1954	2,718	268,971	268,971	223	14,807	68.6	1,001,299	471,943	84	..	5	5.6
1953	2,718	305,836	305,836	299	15,628	66.5	1,071,559	500,611	85	..	4	4.5
Illinois Central....1954	6,539	1,269,905	1,272,424	41,168	48,169	60.6	3,585,325	1,636,284	443	89	139	29.7
1953	6,537	1,393,009	1,398,173	48,420	49,003	59.6	3,652,266	1,636,550	531	41	72	11.2
Louisville & Nashville....1954	4,713	852,293	857,055	16,959	30,663	59.6	2,351,649	1,168,192	241	41	9	3.1
1953	4,728	900,975	936,510	18,467	30,665	61.0	2,299,946	1,136,166	226	44	50	15.6
Nash., Chatt. & St. Louis....1954	1,043	174,367	177,865	3,833	5,803	70.3	374,687	174,082	48	..	5	9.4
1953	1,032	173,726	177,908	3,763	5,705	65.7	386,605	175,304	49	..	4	7.5
Seaboard Air Line....1954	4,053	583,266	583,266	662	23,336	62.2	1,688,270	760,544	141	..	7	4.7
1953	4,067	574,029	574,029	1,351	22,938	63.0	1,638,649	733,158	138	2	12	7.9
Southern....1954	6,262	932,539	932,614	11,531	40,567	65.7	2,678,793	1,204,021	281	..	2	.7
1953	6,253	952,238	952,278	11,010	38,774	66.5	2,548,712	1,151,233	231	4	5	2.1
Northwestern Region												
Chicago & North Western....1954	7,850	713,503	715,910	10,356	29,889	65.3	2,013,355	911,615	145	40	44	19.2
1953	7,849	706,127	708,203	11,322	30,423	63.3	2,075,801	943,113	183	40	80	26.4
Chicago Great Western....1954	1,437	132,143	132,261	323	7,513	69.3	498,569	227,400	31	..	2	6.1
1953	1,435	127,853	127,853	351	7,573	66.2	510,219	223,424	31	..	2	6.1
Chic., Milw., St. P. & Pac....1954	10,632	980,782	993,807	20,922	42,120	64.0	2,870,398	1,266,875	311	38	57	14.0
1953	10,631	1,091,369	1,117,054	34,342	44,584	60.6	3,087,408	1,307,489	342	18	63	14.9
Chic., St. P., Minn. & Omaha..1954	1,606	160,252	161,535	4,465	5,535	72.3	367,085	168,237	59	3	19	23.5
1953	1,606	164,042	165,351	4,851	5,573	65.3	389,955	174,386	60	9	15	17.9
Duluth, Missabe & Iron Range..1954	567	43,991	44,158	837	1,216	51.5	110,208	59,126	29	35	8	11.1
1953	568	103,967	104,517	1,508	4,270	50.5	401,293	225,892	29	24	22	2.9
Great Northern....1954	8,295	1,094,992	1,101,204	31,373	44,829	64.8	3,156,096	1,425,439	234	175	52	11.3
1953	8,291	1,167,246	1,168,251	35,048	46,313	63.8	3,386,376	1,574,702	301	141	39	8.1
Minneap., St. P. & S. Ste. M..1954	4,169	378,750	381,460	2,760	13,255	69.9	807,376	363,144	96	..	18	15.8
1953	4,172	370,200	373,101	3,855	11,596	67.8	735,105	333,831	107	4	9	7.5
Northern Pacific....1954	6,570	833,032	854,644	23,039	32,133	65.7	2,229,178	1,007,429	284	25	65	17.4
1953	6,582	872,850	902,678	35,907	31,661	60.9	2,304,711	1,033,625	318	12	71	17.7
Central Western Region												
Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)..1954	13,076	2,317,588	2,407,497	58,283	104,532	63.9	7,073,933	2,626,221	515	101	32	4.9
1953	13,095	2,473,678	2,514,562	73,677	108,000	64.8	7,128,290	2,644,508	575	123	41	5.5
Chic., Burl. & Quincy....1954	8,824	1,230,029	1,232,427	37,522	48,940	62.7	3,317,526	1,398,742	296	7	33	9.8
1953	8,833	1,224,506	1,232,978	40,403	49,860	64.0	3,383,513	1,472,521	308	28	37	9.9
Chic., Rock I. & Pac....1954	7,907	837,745	833,391	691	32,257	61.9	2,288,036	945,030	164	7	4	2.3
1953	7,866	857,201	862,444	6,476	33,357	62.3	2,375,575	1,009,976	173	2	8	4.4
Denver & R. G. Wn....1954	2,165	318,232	339,514	32,845	14,341	68.5	1,023,729	480,980	70	35	35	25.0
1953	2,311	320,766	349,897	35,269	14,693	70.9	1,021,180	485,051	79	33	40	26.3
Southern Pacific....1954	8,063	2,089,748	2,199,990	254,900	91,570	62.6	6,334,754	2,570,167	615	30	134	17.2
1953	8,065	2,039,458	2,142,919	224,114	87,141	62.1	6,115,977	2,496,316	648	97	111	13.0
Union Pacific....1954	9,816	2,519,730	2,570,922	119,545	109,032	63.8	7,323,475	2,956,171	463	201	138	17.2
1953	9,821	2,810,241	2,894,793	171,127	107,374	60.5	7,722,802	3,202,283	588	99	153	18.2
Western Pacific....1954	1,190	223,943	228,516	11,945	9,888	68.5	645,101	292,227	39	5	2	4.3
1953	1,190	224,276	229,090	13,126	10,722	72.1	683,027	313,190	41	4	2	4.3
Southwestern Region												
International-Gt. Northern*....1954	1,103	122,032	122,032	57	5,268	65.4	373,981	174,751	42	..	2	4.6
1953	1,104	146,342	146,342	....	5,335	63.6	383,271	174,048	47	..	3	6.0
Kansas City Southern....1954	886	134,045	134,045	233	7,439	65.0	531,024	231,743	25	..	2	7.4
1953	886	163,190	163,210	164	8,461	64.3	619,442	288,406	23	..	2	8.0
Mo.-Kans.-Texas Lines....1954	3,229	341,105	341,105	3,869	13,609	63.9	890,262	369,014	85	..	..	..
1953	3,230	361,010	361,010	4,155	13,905	64.2	909,769	394,811	85	..	..	..
Missouri Pacific*....1954	6,896	951,822	951,826	11,064	41,648	64.6	2,883,894	1,284,914	200	47	98	28.4
1953	6,917	1,144,450	1,146,947	13,318	43,825	62.6	3,101,480	1,353,942	260	29	94	24.5
Texas & Pacific....1954	1,822	325,435	325,435	3,022	13,872	60.3	1,026,497	385,678	57	..	5	8.1
1953	1,827	320,157	320,157	3,600	13,593	60.5	995,472	376,712	61	..	..	..
St. Louis-San Francisco....1954	4,564	591,253	591,253	5,624	23,298	63.4	1,586,993	684,574	111	..	5	4.3
1953	4,564	635,484	635,484	6,065	25,021	64.5	1,662,934	711,218	188	..	5	2.6
St. Louis Southw. Lines....1954	1,555	281,827	281,833	1,341	12,913	71.0	796,076	355,857	56	5	12	16.4
1953	1,555	296,162	296,196	4,027	13,403	70.6	847,316	378,762	57	14	3	4.1
Texas & New Orleans....1954	4,275	663,977	663,977	12,901	25,877	63.7	1,802,659	776,075	141	..	34	19.4
1953	4,279	695,244	695,244	13,203	26,588	63.7	1,860,907	807,518	180	..	42	18.9

For the Month of November 1954 Compared with November 1953

Region, Road and Year		Freight cars on line				G.t.m.per train-hr. excl.locos. and tenders	G.t.m.per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car-miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
		Home	Foreign	Total	Per Cent B.O.									
New Eng. Region — Boston & Maine	1954	2,473	8,061	10,543	4.8	37,190	2,339	953	26.8	744	42.4	4,773	15.9	124.2
	1953	2,124	7,753	9,877	2.3	40,417	2,414	981	26.2	820	46.8	4,802	16.8	119.0
New Eng. Region — N. Y., N. H. & Hfd	1954	2,725	14,428	17,153	3.2	42,087	2,661	1,100	25.3	541	31.2	5,234	15.8	117.9
	1953	2,801	14,093	16,894	2.5	40,476	2,446	1,034	26.0	607	33.7	5,807	16.6	126.3
Great Lakes Region — Delaware & Hudson	1954	6,113	4,310	10,423	6.2	62,473	3,398	1,723	35.8	1,039	44.3	13,430	18.5	164.7
	1953	6,793	4,241	11,034	6.1	63,067	3,178	1,655	35.6	1,017	40.5	13,403	19.9	162.1
Great Lakes Region — Del., Lack. & Western	1954	6,990	9,630	16,620	4.1	51,328	3,021	1,306	28.4	654	35.2	11,476	17.3	166.7
	1953	7,677	8,511	16,188	4.2	51,466	2,967	1,285	28.6	668	34.9	11,551	17.7	166.2
Great Lakes Region — Erie	1954	12,798	15,541	28,339	5.1	66,591	3,507	1,367	24.0	853	52.7	10,984	19.2	128.2
	1953	10,746	15,357	26,103	4.0	64,998	3,444	1,355	23.8	948	57.7	11,382	19.0	129.1
Great Lakes Region — Grand Trunk Western	1954	4,408	8,708	13,196	6.1	47,496	2,388	966	28.7	577	33.1	7,710	20.0	104.6
	1953	3,971	8,294	12,265	4.8	49,523	2,325	956	28.8	595	34.3	7,513	21.4	106.2
Great Lakes Region — Lehigh Valley	1954	9,004	7,400	16,404	3.8	69,374	3,400	1,533	30.8	632	31.6	9,118	20.6	227.5
	1953	7,928	8,442	16,370	4.9	65,213	3,285	1,483	30.5	649	32.3	9,359	20.1	243.5
Great Lakes Region — New York Central	1954	72,605	84,453	157,058	8.2	51,188	3,013	1,318	32.1	632	33.4	9,249	17.3	111.0
	1953	70,555	92,766	163,321	10.1	50,156	2,876	1,241	31.8	622	33.7	9,548	17.7	109.8
Great Lakes Region — New York, Chic. & St. L.	1954	9,751	13,595	23,346	8.1	49,846	2,828	1,261	31.4	1,180	59.1	13,270	17.9	120.3
	1953	8,829	12,902	21,731	6.9	51,272	2,778	1,217	31.2	1,220	62.5	13,357	18.7	107.8
Great Lakes Region — Pitts. & Lake Erie	1954	8,064	5,805	13,869	11.1	59,088	3,966	2,412	53.3	290	8.5	18,789	15.0	76.7
	1953	3,533	8,493	12,026	7.3	56,869	3,623	2,093	50.2	358	11.9	20,129	15.7	69.6
Great Lakes Region — Wabash	1954	8,866	10,392	19,258	8.9	64,422	2,907	1,115	24.9	979	60.3	7,918	22.3	177.1
	1953	8,235	10,562	18,797	9.7	65,149	2,795	1,090	25.5	957	57.9	7,932	23.4	130.3
Central Eastern Region — Baltimore & Ohio	1954	56,098	37,808	93,906	15.4	47,876	3,099	1,472	36.4	717	32.2	11,384	15.6	102.0
	1953	56,375	41,329	97,704	4.9	47,389	3,078	1,452	35.2	733	35.1	12,016	15.6	100.5
Central Eastern Region — Bessemer & Lake Erie	1954	7,238	648	7,886	15.2	61,324	4,617	2,894	65.0	406	9.5	14,041	14.0	85.5
	1953	6,400	822	7,222	12.8	89,702	6,043	3,901	76.1	833	18.1	31,160	15.2	67.7
Central Eastern Region — Central RR Co. of New Jersey	1954	5,399	9,542	14,941	11.7	39,937	2,913	1,507	39.8	394	15.4	9,721	14.3	91.6
	1953	4,479	9,395	13,974	8.9	40,035	3,006	1,579	38.7	444	17.1	9,904	13.9	78.7
Central Eastern Region — Chicago & Eastern Ill.	1954	3,245	3,445	6,690	5.4	48,598	2,911	1,589	34.0	1,017	45.7	7,524	16.7	151.6
	1953	3,249	2,744	5,993	8.4	40,482	2,740	1,303	32.7	812	38.3	5,859	18.2	149.6
Central Eastern Region — Elgin, Joliet & Eastern	1954	7,602	6,908	14,510	8.6	23,206	2,653	1,417	43.4	235	8.8	14,179	9.1	76.5
	1953	7,057	10,736	17,793	5.5	21,135	2,648	1,405	42 8	230	8 6	17,441	8.5	100.5
Central Eastern Region — Pennsylvania System	1954	115,421	88,286	203,707	14.1	54,708	3,168	1,474	33.4	618	28.8	12,702	17.7	78.0
	1953	107,778	97,240	205,018	7.3	52,372	3,038	1,418	34.4	644	30.0	13,321	17.8	80.4
Central Eastern Region — Reading	1954	20,135	16,619	36,754	6.5	45,737	3,089	1,614	44.0	482	18.0	12,973	14.8	65.7
	1953	18,645	16,769	35,414	5.5	42,722	3,057	1,590	41.2	526	20.5	13,864	14.0	65.2
Central Eastern Region — Western Maryland	1954	6,686	2,884	9,570	2.9	46,533	3,203	1,784	46.1	956	32.8	10,544	14.8	93.9
	1953	6,984	2,950	9,934	2.9	44,721	3,179	1,758	46.9	1,039	36.6	11,595	14.3	65.9
Pocahontas Region — Chesapeake & Ohio	1954	57,848	25,509	83,357	5.4	66,204	3,528	1,915	46.9	981	37.7	15,798	18.8	83.7
	1953	56,775	19,000	75,775	3.5	66,736	3,609	1,950	46 7	1,014	39.1	15,369	18.6	75.4
Pocahontas Region — Norfolk & Western	1954	38,339	6,997	45,336	2.1	75,064	4,470	2,414	50.0	1,157	39.5	23,495	17 2	96.1
	1953	39,180	6,827	46,007	2.1	71,985	4,139	2,204	47.8	1,038	37.5	21,208	17.7	92.6
Southern Region — Atlantic Coast Line	1954	21,031	13,672	34,703	2.9	39,933	2,250	1,004	33.4	732	38.4	4,742	17.8	115.7
	1953	18,537	16,282	34,819	2.2	40,027	2,335	1,055	32.7	737	37.7	4,782	17.2	111.9
Southern Region — Central of Georgia	1954	3,273	5,484	8,757	5.4	47,247	2,715	1,286	32.7	881	40.3	4,718	17.5	95.9
	1953	3,108	5,124	8,232	3.1	45,793	2,519	1,160	31.7	911	43.6	4,334	18.3	102.9
Southern Region — Gulf, Mobile & Ohio	1954	5,924	8,817	14,741	2.7	73,452	3,728	1,757	31.9	1,052	48.1	5,786	19.7	108.7
	1953	5,977	9,268	15,245	5.3	69,663	3,515	1,642	32.0	1,063	49.9	6,139	19.9	122.5
Southern Region — Illinois Central	1954	29,999	22,019	52,018	2.4	46,622	2,856	1,304	34.0	1,027	49.9	8,341	16.5	71.1
	1953	31,246	23,668	54,914	2.6	45,101	2,658	1,191	33.4	955	48.0	8,345	17.2	80.8
Southern Region — Louisville & Nashville	1954	37,701	11,731	49,432	3.7	48,376	2,766	1,374	38.1	827	36.5	8,262	17.5	108.7
	1953	39,663	11,907	51,570	3.5	44,768	2,561	1,265	37.1	761	33.7	8,010	17.5	106.7
Southern Region — Nash., Chatt. & St. Louis	1954	3,704	3,310	7,014	1.4	42,409	2,155	1,001	30.0	836	39.6	5,564	19.7	122.4
	1953	3,104	3,738	6,842	2.4	41,872	2,227	1,010	30.7	899	44.5	5,662	18.8	123.5
Southern Region — Seaboard Air Line	1954	14,116	12,860	26,976	2.6	53,077	2,933	1,321	32.6	933	46.0	6,255	18.3	157.0
	1953	13,090	13,629	26,719	2.2	50,907	2,891	1,293	32.0	937	46.5	6,009	17.8	149.1
Southern Region — Southern	1954	18,791	26,332	45,123	4.6	49,546	2,879	1,294	29.7	895	45.9	6,409	17.2	121.8
	1953	17,109	27,366	44,475	3.2	47,843	2,690	1,215	29.7	856	43.4	6,137	17.9	145.1
Northwestern Region — Chicago & North Western	1954	18,439	26,245	44,684	4.4	49,663	2,910	1,317	30.5	667	33.5	3,871	17.6	111.5
	1953	22,197	26,871	49,068	5.7	51,346	3,031	1,377	31.0	639	32.6	4,005	17.5	85.5
Northwestern Region — Chicago Great Western	1954	2,321	3,879	6,200	3.0	74,203	3,777	1,723	30.3	1,265	60.4	5,275	19.7	139.5
	1953	1,872	3,391	5,263	3.7	76,574	4,011	1,756	29.5	1,312	67.2	5,190	19.2	135.3
Northwestern Region — Chic., Milw., St. P. & Pac.	1954	34,855	28,558	63,413	6.4	53,841	2,940	1,298	30.1	662	34.4	3,972	18.4	91.6
	1953	35,288	30,864	66,152	5.6	51,194	2,843	1,204	29.3	676	38.1	4,100	18.1	98.0
Northwestern Region — Chic., St. P., Minn. & Omaha	1954	1,188	6,956	8,144	4.2	33,808	2,343	1,074	30.4	664	30.2	3,492	14.8	75.9
	1953	1,223	7,605	8,828	5.6	35,901	2,429	1,086	31.3	664	32.5	3,619	15.1	71.5
Northwestern Region — Duluth, Missabe & Iron Range	1954	14,755	600	15,355	1.7	39,887	2,657	1,426	48.6	129	5.2	3,476	15.9	25.3
	1953	15,223	521	15,744	3.4	70,095	4,078	2,295	52.9	481	18.0	13,253	18.2	54.7
Northwestern Region — Great Northern	1954	22,225	23,467	45,692	3.1	55,134	2,909	1,314	31.8	1,045	50.7	5,728	19.1	87.2
	1953	23,057	25,010	48,067	3.5	52,205	2,937	1,366	34.0	1,081	49.8	6,331	18.0	91.8
Northwestern Region — Minneap., St. P. & S. Ste. M.	1954	7,485	7,251	14,736	5.0	44,770	2,149	967	27.4	819	42.8	2,904	21.0	119.7
	1953	6,843	7,284	14,127	5.8	40,645	1,994	905	28.8	781	40.0	2,667	20.5	114.7
Northwestern Region — Northern Pacific	1954	19,761	15,866	35,627	5.2	50,443	2,691	1,216	31.4	926	44.9	5,111	18.9	84.5
	1953	20,982	17,984	38,966	5.3	49,224	2,664	1,195	32.6	926	46.6	5,235	18.6	84.6
Central Western Region — Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1954	55,528	35,295	90,823	3.9	69,782	3,063	1,137	25.1	981	61.2	6,695	22.9	134.5
	1953	47,633	37,075	84,708	3.4	66,444	2,890	1,072	24.5	1,062	66.9	6,732	23.1	126.1
Central Western Region — Chic., Burl. & Quincy	1954	19,214	26,485	45,699	3.2	55,525	2,705	1,140	28.6	1,020	56.9	5,284	20.6	131.1
	1953	19,733	25,633	45,366	2.9	56,027	2,770	1,206	29.5	1,077	57.0	5,557	20.3	119.4
Central Western Region — Chic., Rock I. & Pac.	1954	13,819	17,643	31,462	6.4	53,314	2,736	1,130	29.3	1,016	56.1	3,984	19.5	169.0
	1953	12,414	21,919	34,333	4.6	54,437	2,776	1,180	30.3	1,012	53.7	4,280	19.6	168.1
Central Western Region — Denver & R. G. Wn.	1954	8,627	5,646	14,273	3.5	59,696	3,224	1,515	33.5	1,098	47.8	7,405	18.6	95.3
	1953	7,767	5,839	13,606	2.9	56,075	3,199	1,519	33.0	1,135	48.5	6,996	17.6	88.9
Central Western Region — Southern Pacific	1954	33,993	40,484	74,477	2.0	57,137	3,061	1,242	28.1	1,153	65.6	10,625	18.8	114.4
	1953	31,796	41,968	73,764	2.2	54,404	3,027	1,236	28.6	1,136	63.8	10,317	18.1	98.2
Central Western Region — Union Pacific	1954	30,512	33,297	63,809	2.6	75,298	2,929	1,182	27.1	1,479	85.5	10,039	25.9	114.0
	1953	31,678	31,387	63,065	2.3	67,524	2,781	1,153	29.8	1,620	89.8	10,869	24.6	125.2
Central Western Region — Western Pacific	1954	2,523	3,186	5,709	2.5	73,878	2,896	1,312	29.6	1,731	85.5	8,186	25.6	182.1
	1953	2,311	2,721	5,032	5.8	73,444	3,061	1,404	29.2	1,935	91.9	8,773	24.1	166.2
Southwestern Region — International-Gt. Northern*	1954	945	5,565	6,510	3.0	64,247	3,075	1,437	33.2	903	41.6	5,281	21.0	96.6
	1953	779	5,956	6,735	3.0	56,132	2,619	1,189	32.6	875	42.2	5,255	21.4	102.6
Southwestern Region — Kansas City Southern	1954	1,099	6,157	7,256	3.7	84,558	3,970	1,733	31.2	1,073	53.0	8,719	21.3	182.3
	1953	920	5,926	6,846	2.1	81,196	3,806	1,772	34.1	1,353	61.7	10,850	21.4	232.1
Southwestern Region — Mo.-Kans.-Texas Lines	1954	5,158	6,243	11,401	7.5	56,020	2,619	1,085	27.1	1,143	66.0	3,809	21.5	144.4
	1953	4,876	6,910	11,786	3.9	53,591	2,527	1,097	28.4	1,140	62.6	4,074	21.3	152.9
Southwestern Region — Missouri Pacific*	1954	20.037	18,595	38,632	9.5	66,315	3,037	1,353	30.9	1,079	54.1	6,211	21.9	98.9
	1953	18,502	15,912	34,414	3.4	5*,763	2,718	1,187	30.9	1,300	67.2	6,525	22.1	107.2
Southwestern Region — Texas & Pacific	1954	3,273	6,386	9,659	3.3	68,097	3,168	1,190	27.8	1,251	80.6	7,056	21.6	190.9
	1953	3,185	6,993	10,178	4.6	65,738	3,123	1,182	27.7	1,239	73.8	6,873	21.1	191.1
Southwestern Region — St. Louis-San Francisco	1954	12,137	10,548	22,685	2.6	52,041	2,687	1,159	29.4	1,015	54.5	5,000	19.4	191.1
	1953	12,206	14,081	26,287	2.9	48,225	2,621	1,121	28.4	935	51.0	5,194	18.4	121.9
Southwestern Region — St. Louis Southw. Lines	1954	2,540	3,831	6,371	2.1	57,441	2,831	1,266	27.6	1,731	88.5	7,628	20.3	143.3
	1953	2,381	4,497	6,878	2.2	55,049	2,864	1,280	28.3	1,781	89.3	8,119	19.2	137.6
Southwestern Region — Texas & New Orleans	1954	6,828	14,618	21,446	2.4	55,571	2,731	1,176	30.0	1,226	64.1	6,051	20.5	138.0
	1953	6,285	15,154	21,439	1.6	53,972	2,692	1,168	30.4	1,220	63.1	6,291	20.2	112.7

*Report of trustee or trustees.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

"I've been making Trackwork

Mr. Bruce working on a pattern for a solid manganese frog, A.R.E.A. type.

UNITED STATES STEEL

patterns for 42 years"

SAYS *Archie Bruce*, U.S. STEEL PATTERN MAKER

● In 1912, Archie Bruce started to work as an apprentice pattern maker at U.S. Steel's Johnstown Works. It was almost a family tradition that he should, since his father, too, was a pattern maker —for 37 years.

Archie Bruce fashions perfect patterns from top grade California pine for every type of casting used in Trackwork—from small chocks to huge one-piece cast crossings. He is the master of innumerable tools; gouges, chisels, knives, saws, planes, braces and bits, turning tools, measuring tools—*all* tools for shaping wood. But adeptness at woodworking is only the beginning.

With blueprints as his guide, the pattern maker must be able to visualize each completed, machined casting in its three-dimensional form. He must know foundry practices and limitations, molding and core making. He must be familiar with machine shop practices so that he can provide the proper amount of excess stock for finishing—surface metal which will eventually be removed from the casting. And since he makes his pattern slightly oversize to allow for eventual shrinkage of the casting during cooling, the pattern maker must be familiar with the metallurgical properties of the steel being used.

From the precise patterns Archie Bruce produces, molds are made. From these molds come castings of tough manganese steel. The finished size and shape of the casting is completely dependent upon the accuracy of the pattern. Thus, a great deal depends on Archie Bruce. Forty-two years of pattern making, however, have made him more than equal to the job of turning out superior work. Here is a superb craftsman; another reason for our saying—*years of experience, plus painstaking manufacture, make USS Trackwork the finest you can buy.*

For further information, write to United States Steel Corporation, 525 William Penn Place, Room 4589, Pittsburgh 30, Pa.

USS

TRACKWORK

UNITED STATES STEEL CORPORATION, PITTSBURGH — TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO — UNITED STATES STEEL EXPORT COMPANY, NEW YORK

MAKES ONE TRACK MOVE MORE FREIGHT FASTER!

Here's the missing link in railroad communications . . . instant voice contact with any train anywhere . . . regardless of its location, the weather or the terrain.

Called Bendix Centralized Radio Control, it opens up new ways to substantial savings. There is no need to scrap or duplicate your present equipment. Bendix CRC is integrated with your present communication system.

How it works

By two way radio the dispatcher and train crew can talk to each other any time directly or through attended or unattended wayside stations. The conductor in the caboose can talk to his engineer. There can be instant voice contact from one train to another. Bendix CRC permits instantaneous supervision and control of train movement.

What it accomplishes

With Bendix Centralized Radio Control, breakdowns and emergencies are immediately made known. Freight classification is speeded. Longer freights move faster with fewer accidents to rolling stock. Breakdowns and emergencies get immediate attention. Single tracks can handle larger volume both ways. Better "meets" and changes of "meets" are possible. Unscheduled stops seeking information are eliminated. Knowing locations, conditions and speed of trains eliminates delays at interlocking plants, or when entering and departing yards. And there are a host of other time-saving reasons.

Send for the free Bendix booklet that gives you even more facts why so many railroad managements, seeking new sources of revenue, are enthusiastic over the potential and actual economies of instant radio control between trains, wayside stations and division headquarters.

BENDIX® RADIO
BALTIMORE 4, MARYLAND

A DIVISION OF BENDIX
AVIATION CORPORATION

EXPORT SALES: Bendix International Division
205 E. 42nd St., New York 17, N. Y., U. S. A.

Bendix
C ☆ R ☆ C
centralized radio control

Bendix THE MOST TRUSTED NAME IN Radio

Vol. I of brake study course

ABC's of AIR BRAKES

with Dictionary of Air Brake Terms

by C. M. DRENNAN

A teacher of air brakes to railroad men since 1908; retired supervisor of training, Westinghouse Air Brake Co.

This complete introduction to the study of air brakes contains 70 of the famous "chalk talk" diagrams which the author has used successfully for years. Its three sections include: Section 1—friction and braking ratio: freight and passenger train brake control. Section 2—description, function and operation of pistons, valves, electric controls and other components. Section 3—air brake dictionary covering words, terms and phrases, many of which have specific air brake meanings. Following each chapter is a quiz to test the student's absorption of the lesson. A practical book for practical men. 243 pages; approximately 8 by 11 inches: cloth bound.

Full Refund If Not Completely Satisfied

Send for your copy today

Only $4.75 postpaid

2-21-55

SIMMONS-BOARDMAN BOOKS
30 Church St., New York 7, N. Y.

I enclose check or money order for $..... Send postpaid, ... copies of ABC's of AIR BRAKES. If I am not satisfied I may return books for full refund within 10 days after receipt.

Name .....

Address .....

City, zone, state .....

ROLLING STOCK
40 Ton Steel Sheathed Box Cars
50 Ton All Steel Gondolas
70 Ton All Steel Gondolas
8000 Gal. Tank Cars Cl. III
Coiled—Non Coiled
50 or 70 Ton Flat Cars 40' Long
30 Yd. Magor Drop Door Cars
20 Yd. Koppel Lift Door Cars
Jordan Spreader
Locomotives—Car Parts—Tanks
HYMAN-MICHAELS CO.
122 S. MICHIGAN AVE.
CHICAGO 3, ILL.
San Francisco Los Angeles St. Louis New York

CLASSIFIED ADVERTISEMENTS

FOR SALE
RAILWAY EQUIPMENT
Used—As Is—Reconditioned

RAILWAY CARS
All Types

"Service-Tested"
FREIGHT CAR REPAIR PARTS
For All Types of Cars

LOCOMOTIVES
Diesel, Steam, Gasoline, Diesel-Electric

RAILWAY TANK CARS and STORAGE TANKS
6,000 - 8,000 and 10,000-gallon Cleaned and Tested

CRANES
Overhead and Locomotive

RAILS
New or Relaying

IRON & STEEL PRODUCTS, INC.
"ANYTHING containing IRON or STEEL"

General Office
13456 So. Brainard Ave.
Chicago 33, Illinois
Phone: Mitchell 6-1212

New York Office
50-c Church Street
New York 7, New York
Phone: BEekman 3-8230

Educational Services for RAILROAD MEN

Our New Service on Diesel Locomotive Operation is highly recommended for Engineers and Firemen

The Railway Educational Bureau
Omaha 2, Nebraska

Robert W. Hunt Company
ENGINEERS

Inspection—Tests—Consultation
All Railway Equipment
Structures and Materials
General Office:
173 W. Jackson Boulevard
CHICAGO
New York-Pittsburgh-St. Louis

Keep Buying

Savings Bonds

ADVERTISERS IN THIS ISSUE

American Creosoting Co. 24, 25
Agency—Russell T. Gray, Inc.

American Hair & Felt Co. 22
Agency—Oscar P. Holtzman Advtg.

American Locomotive Co. 26, 27
Agency—Hazard Advertising Co.

American Steel & Wire Division, U. S. Steel Corp. 68, 69
Agency—Batten, Barton, Durstine & Osborn, Inc.

Automatic Electric Sales Co. 57
Agency—Probsting-Taylor, Inc.

Bendix Radio Div. of Bendix Aviation Co. 70
Agency—MacManus, John Adams, Inc.

Bethlehem Steel Co. 1
Agency—Jones & Brakeley, Inc.

Buckeye Steel Castings Co., The 12
Agency—T. J. Stead, Advtg.

Buffalo Brake Beam Co. ..... Inside Front Cover

Cardwell-Westinghouse Co. 59
Agency—Stuart Potter Co., The

Caterpillar Tractor Co. 37
Agency—N. W. Ayer & Son, Inc.

Chicago Steel Service Co. 72
Agency—Fred H. Ebersold, Inc.

Classified Advertisements 71

Columbia-Geneva Steel Division U. S. Steel Corp. 68, 69
Agency—Batten, Barton, Durstine & Osborn, Inc.

Cornell-Dubilier Electric Corp. 58
Agency—Friend-Reiss-McGlone Advtg.

Edgewater Steel Co. 15
Agency—Walker & Downing

Electric Storage Battery Co. 21
Agency—Geare-Marston, Inc.

Fairbanks-Morse & Co. 40, 41
Agency—The Buchen Co.

Flintkote Co. 58
Agency—Marschalk & Pratt Div. of McCann Erickson

General American Transportation Corp. 46
Agency—Weiss & Geller, Inc.

General Chemical Division of Allied Chemical & Dye Corp. ..... Back Cover
Agency—Atherton & Currier, Inc.

General Steel Castings 63
Agency—Oakleigh R. French & Assoc.

Hertz Rent-A-Car System 6
Agency—Campbell-Ewald Co. Inc.

Hunt, Robert W. Co. 71

Hyatt Roller Bearings Div. of General Motors 4
Agency—Brother & Co., Inc., D. P.

Hyman Michaels Co. 71

Iron & Steel Products, Inc. 71

Lewis Bolt & Nut Co. 58
Agency—Lasky Advtg. Agency

National Malleable and Steel Castings Co. ..... 29 to 34 inc.
Agency—Palm & Paterson, Inc.

National Motor Bearing Co., Inc. ..... 17 to 20 inc.
Agency—Cole Co., L. C.

National Tube Division, U. S. Steel Corp. 68, 69
Agency—Batten, Barton, Durstine & Osborn, Inc.

Oakite Products, Inc. 64
Agency—Rickard & Co., Inc.

Owens-Corning Fiberglas Corp. 39
Agency—McCann Erickson, Inc.

Railway Education Bureau, The 71

Scintilla Div. of Bendix Aviation Corp. 28
Agency—MacManus, John & Adams, Inc.

Socony-Vacuum Oil Co., Inc. 44
Agency—Compton Advtg. Inc.

Sperry Rail Service 43

Standard Car Truck Co. 61
Agency—Stuart Potter Agency

Tennessee Coal & Iron Division, U. S. Steel Corp. 68, 69
Agency—Batten, Barton, Durstine & Osborn, Inc.

Timken Roller Bearing Co. The ..... Front Cover
Agency—Batten, Barton, Durstine & Osborn, Inc.

Union Switch & Signal 2
Agency—Batten, Barton, Durstine & Osborn, Inc.

United States Steel Corp. 68, 69
Agency—Batten, Barton, Durstine & Osborn, Inc.

United States Steel Export Co. 68, 69
Agency—Batten, Barton, Durstine & Osborn, Inc.

United States Steel Supply Division, U. S. Steel Corp. 68, 69
Agency—Batten, Barton, Durstine & Osborn, Inc.

Waugh Equipment Co. ..... Inside Back Cover

Westinghouse Air Brake Company 23
Agency—Cramer-Krasselt Co., The

Whiting Corp. 65
Agency—Waldie & Briggs

Complete Service in Stainless and Carbon Steels

CHICAGO STEEL SERVICE COMPANY

The House of Stainless STEEL AT YOUR SERVICE STEEL

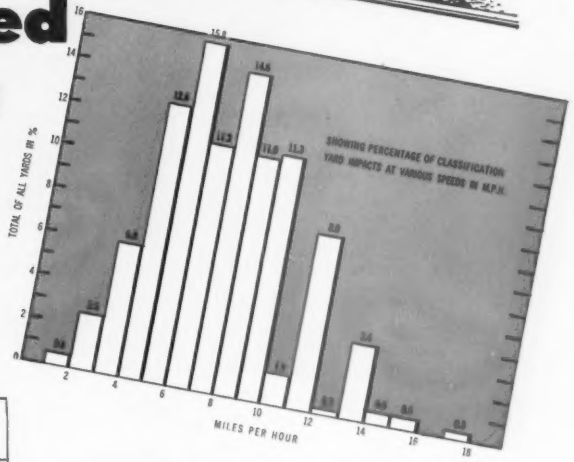
Kildare Avenue at 45th Street • Chicago 32, Illinois • Telephone LAfayette 3-7210

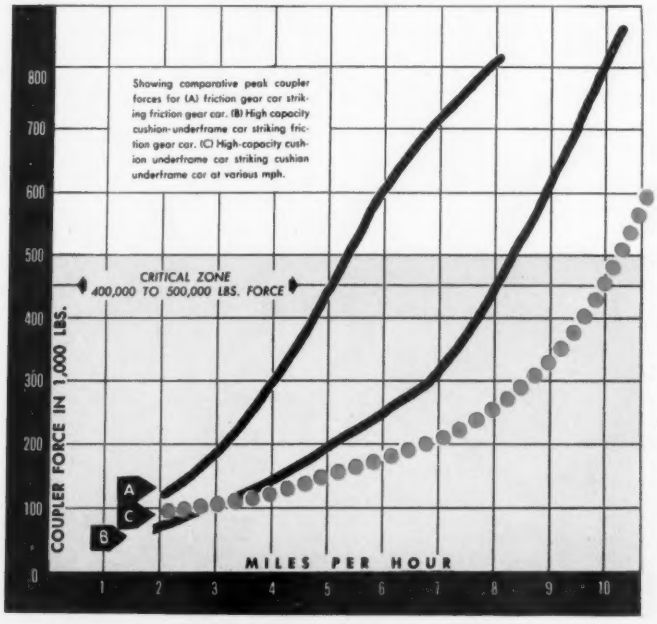
Milwaukee District Office: 757 N. Broadway, Milwaukee 2, Wisc. BRoadway 2-7874 • *Minneapolis District Office:* 3501 Hennepin Ave., Minneapolis 8, Minn. COlfax 2602

Sales Representatives at Bloomington and Rockford, Ill.; Indianapolis and South Bend, Ind.; Cedar Rapids and Bettendorf, Iowa; Grand Rapids Mich.; Fond du Lac, Wisc.

HARD-HIT CARS

need the high-speed impact protection of WAUGH HIGH CAPACITY *Cushion Underframe*




Showing comparative peak coupler forces for (A) friction gear car striking friction gear car. (B) High capacity cushion-underframe car striking friction gear car. (C) High-capacity cushion underframe car striking cushion underframe car at various mph.
CRITICAL ZONE
400,000 TO 500,000 LBS. FORCE
COUPLER FORCE IN 1,000 LBS.
MILES PER HOUR
A
C
B

In consequence of today's accelerated railroad freight operations, cars in classification yards, frequently coupling at 6, 8, 10, mph, take a terrific beating. The number of these coupling impacts made at speeds above the 4 mph friction-gear average safe-speed limit are far greater than are the impacts at speeds below 4 mph.

This modern high-speed freight car operation makes modern high-capacity cushioning a prime essential. To protect cars from structural damage and repair, and to protect lading, equip all new cars with the Waugh High-Capacity Cushion Underframe.

Note the curve in the graph. Here is the record of carefully instrumented comparative tests which shows conclusively the extra protection afforded by the Waugh High-Capacity Cushion Underframe.

90,000 FT. LBS. of protection

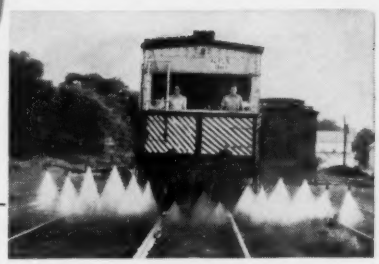
Inquiries invited

WAUGH EQUIPMENT COMPANY 420 Lexington Ave., New York 17, N. Y.

CHICAGO · ST. LOUIS · CANADIAN WAUGH EQUIPMENT COMPANY, MONTREAL

Here's the *RIGHT* WAY TO CONTROL WEEDS...

Rite-o-way* BRAND WEED KILLERS



General Chemical's Railroad Weed Control Service provides the most advanced type of spray trains with specially designed spray heads to give complete control for all conditions.

RIGHT for the big jobs

TCA-CHLORATE Liquid Concentrate in Tank Car Lots for Spray Train Application.

General Chemical's "Rite-o-way" Brand TCA-CHLORATE is made especially for large-scale railroad weed control operations. This special high-strength formulation of sodium trichloroacetate and sodium chlorate is an outstanding all-purpose weed killer used on leading railroads. General Chemical's Railroad Weed Control Service can furnish you with a complete, professionally planned control program for using "Rite-o-way" TCA-CHLORATE, including equipment and trained technical crews to do the spraying.

Spray apparatus is designed to provide variable volume of output for greater kill where heavier weed growths are found.

RIGHT for the small jobs

"STA-KLOR" Spray Powder in 100-lb. Drums for Dry or Wet Application by your regular labor crews.

For those nuisance jobs of weed killing in terminal yards, rip tracks, storage yards, station curbs and driveways, switches, ladder tracks and many more. STA-KLOR is the same powerful herbicide as "Rite-o-way" TCA-CHLORATE, a high-strength formulation of sodium trichloroacetate and sodium chlorate. A convenient spray powder—it can be used both as a dust and a spray. Handy 100-lb. drums; can be applied by your regular labor crews.

General Chemical STA-KLOR® gives you these big advantages:

- **Economical.**
- **Easy to handle . . . easy to use.**
- **Gets both broad-leafed and grassy weeds.**
- **Kills roots, prevents regrowth.**
- **Does not create fire hazard . . . retards burning.**

Reg. U. S. Pat. Off.

GENERAL CHEMICAL WEED CONTROL

VISIT OUR EXHIBIT—BOOTH 179
at the NATIONAL RAILWAY APPLIANCES ASSOCIATION EXHIBIT
CHICAGO COLISEUM, MARCH 14 to 17

GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

GC Allied Chemical